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ABSTRACT

A Legislative Commission formed by the Nevada Legislature studied public elementary and secondary education in the state and made several recommendations. The state's Class-Size Reduction Program should be continued. The State Department of Education should study tracking of students in public schools. School districts should expand the magnet-school concept from its emphasis on occupational education to include additional curricular areas. A school voucher system involving private schools is not feasible for the state. High school occupational education programs should be expanded. A course for grade 7 or 8 students on home and occupational skills should be established. Elementary schools should initiate a daily period of uninterrupted teaching, and new mathematics tests and goals should be adopted. Other recommendations include alternative student assessment methods, revised student drug treatment procedures, new treatment and support networks for hyperactive children, adoption of modified National Education Goals, tuition-free summer school for high school students from needy families, and review of high school graduation requirements. Five appendices comprising about half the document include Assembly Concurrent Resolution No. 85 authorizing this study; Nevada 1991-92 class-size reduction statistics; the Class Size Reduction Evaluation Prospectus; the complete text of the National Goals for Education; and 10 pieces of suggested legislation. (Contains 26 references.) (JPT)

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Study of Public Elementary and Secondary Education

THE GREAT SEAL OF THE STATE OF NEVADA

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Legislative Counsel Bureau

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STUDY OF
PUBLIC ELEMENTARY AND SECONDARY EDUCATION

BULLETIN NO. 93-3

SEPTEMBER 1992

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SUMMARY OF RECOMMENDATIONS

1. Adopt a subcommittee resolution urging the 1993 Nevada Legislature to continue the Class-Size Reduction Program.

2. Adopt a resolution urging the State Department of Education to conduct a study concerning the prevalence of "tracking" students in Nevada's public school system, and report the results and recommendations to the 1995 Legislative Session. The study should include, but not be limited to:

   a. The need for additional teacher training (and the associated funding) to enable teachers to use the innovative teaching methods offered as alternatives to tracking;

   b. The need to measure the extent of ability grouping and monitor the effectiveness of specific forms of tracking; additional data may need to be collected;

   c. How equity matters are addressed, including the quality of instruction and resources in "low-track" classes, along with racial/ethnic inequity;

   d. Parental attitudes toward tracking and "detracking";

   e. The use of "gifted" pupils as role models for other students; potential impact upon existing programs for gifted students; and

   f. The impact of tracking upon student behavior and teacher expectations.

   (BDR R-417)

3. Include a statement in the final report recommending that Nevada's school districts expand the magnet school concept from its current occupational education emphasis to include additional curricular areas (for example, fine arts, languages, mathematics and science). The

districts are encouraged to publicize the differences among the magnet schools and establish an accountability system.

4. Include in the subcommittee's final report a statement concluding that a school choice voucher system involving private schools is not feasible in the State of Nevada at this time.

5. Make an appropriation to the State Treasury to the special fund for the enhancement of occupational education in Grades 9 to 12. The money is to be used to establish classes in Grades 9 and 10 on occupations in general, and to improve occupational classes for pupils in Grades 10, 11 and 12. The money shall be distributed to the districts according to a formula using a base allocation and proportional enrollment. Funding in the amount of $2,252,781 for each year of the next biennium is appropriated from the State General Fund for this purpose. (BDR 34-425)

6. Require, by statute, a one-time appropriation, that the State Board of Education adopt regulations to establish a course of study relating to home and occupational skills. The course would be offered in the 7th and/or 8th Grade, and would instruct students in skills relating to making decisions, solving problems, and management and leadership. Students would learn to apply these skills in all areas of daily living. Funding in the amount of $1,376,340 for Fiscal Year 1994 only is appropriated from the State General Fund for this purpose. (BDR 34-426)

7. Adopt a resolution, directed to all public schools, urging participation in the State Department of Education's Nevada School Improvement Project. (BDR R-419)

8. Adopt a resolution, directed to Nevada's school district boards of trustees, urging the adoption of a daily class schedule in each public elementary school that includes a fixed period of uninterrupted teaching time during each school day. (BDR R-421)

9. Adopt a resolution, directed to the State Board of Education, supporting the following for Nevada's public schools:

a. Implementing the National Council of Teachers of Mathematics curriculum and evaluation standards;

b. Implementing the Nevada State Course of Study for Mathematics;

c. Aligning assessment with the revised Nevada State Course of Study for Mathematics and the National Council of Teachers of Mathematics curriculum and evaluation standards;

d. Promoting equity in mathematics education for all students; and

e. Using technology and concrete materials for instruction as well as assessment.

(BDR R-420)

10. Include in the subcommittee's final report a statement directed to the State Board of Education, expressing support for statewide reform in mathematics education, and support for State matching funds to obtain possible Federal grant money. Include in the statement that Nevada currently supports education reform in general, and mathematics reform indirectly, through its current program of class-size reduction. Such a declaration is expected to facilitate applications for Federal funds for statewide mathematics initiatives.

11. Include a statement in the subcommittee's final report expressing support for implementing and funding the reform of mathematics education in Nevada through a systematic program of staff development designed to implement the revised "Nevada State Course of Study for Mathematics." Such a program would include instructional strategies, content knowledge and alternative/authentic assessment. The program is designed to improve students' understanding and achievement in mathematics.

12. Include a statement in the subcommittee's final report expressing support for implementing and funding the development of forms of alternative assessment, including portfolio assessments, to expand and

align mathematics assessment with the revised "Nevada State Course of Study for Mathematics."

13. Require, by statute, that a physician obtain an informed consent form signed by a parent before a child is placed on Class II drug therapy. The form shall be prepared by the State Board of Health in the Department of Human Resources and should include, but not be limited to, a list of potential side effects of the drug, a description of the need for continuous monitoring by a physician, and a description of alternative therapies. (BDR 40-422)

14. Require, by statute, that the State Board of Education adopt regulations to establish a diagnostic referral network to ensure that children suspected of having Attention Deficit Hyperactivity Disorder be evaluated and diagnosed by a physician who is an expert in screening such cases on a regular basis. (BDR 34-424)

15. Adopt a resolution urging the State Board of Education to adopt a policy of cooperation with medical facilities, educators, physicians and psychologists, school counselors, social workers, marriage and family therapists, and parents to facilitate the diagnosis and treatment of Attention Deficit Hyperactivity Disorder and Attention Deficit Disorder.

    Further resolve that proper classroom placement, physical education programs, behavior modification strategies, counseling, and concurrent drug treatment be attempted. (BDR R-423)

16. Adopt a resolution, directed to the State Board of Education, supporting the National Education Goals. The six goals, modified for Nevada, specify that by the year 2000:

    a. All children in Nevada will start school ready to learn;

    b. The high school graduation rate will be at least 90 percent;

    c. Nevada students will have demonstrated competency in challenging subject matter, and that every school will ensure that students use their minds well;

d. Nevada students will be ranked among the top 10 percent of the Nation in mathematics and science achievement;

e. Every school in Nevada will be free of drugs and violence and offer a disciplined learning environment; and

f. Every adult in Nevada will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

(BDR R-427)

17. Include in the subcommittee's final report a statement supporting funding to allow school districts to offer tuition-free summer school for certain youths from financially needy families. Such a program would, among other things, assist students needing additional units to satisfy requirements to graduate from high school.

18. Include in the subcommittee's final report a recommendation that each school district review requirements for graduation, including the State's requirements, to ensure that students have sufficient time to accumulate the units needed to graduate within 4 years. School districts should consider lengthening the school day, if necessary, to accomplish this objective. Further, recommend that the Legislature review the total units required for graduation from high school.

REPORT TO THE 67TH SESSION OF THE NEVADA LEGISLATURE BY THE LEGISLATIVE COMMISSION'S SUBCOMMITTEE TO STUDY PUBLIC ELEMENTARY AND SECONDARY EDUCATION IN THIS STATE

I. INTRODUCTION

The 66th Session of the Nevada Legislature adopted Assembly Concurrent Resolution No. 85 (File No. 183, *Statutes of Nevada 1991*, pages 2642-2643) which directed the Legislative Commission to study public elementary and secondary education in this State.

The Legislative Commission appointed a subcommittee consisting of nine legislators to conduct the study:

Assemblyman Wendell P. Williams, Chairman
Senator Bob Coffin, Vice Chairman
Senator Diana M. Glomb
Senator Joseph M. Neal, Jr.
Senator Bill R. O'Donnell
Assemblyman John C. Carpenter
Assemblyman Ken Haller
Assemblyman Warren B. Hardy
Assemblyman Joan A. Lambert

Legislative Counsel Bureau staff services for the subcommittee were provided by: Pepper Sturm of the Research Division (principal staff); Tim Chandler (legal counsel), and Lyndl Payne (secretary to the subcommittee).

The subcommittee held six meetings between October 1991 and June 1992, in Carson City, Reno and Las Vegas, Nevada. The subcommittee received presentations and testimony concerning 12 separate topics, including ability grouping of pupils, alternative schooling for violent students, alternative strategies to class-size reduction, centralized policy-making, class-size reduction, early childhood education, hyperactive pupils, innovative teaching methods, lengthening the school year, school choice, school safety, year-round schools.

The subcommittee wishes to recognize and thank the many individuals who attended and participated in its meetings for their cooperation and assistance in providing valuable information about public elementary and secondary education in Nevada.

The members reviewed a great deal of information and have attempted to present their findings and recommendations in this report in a concise manner. All meeting minutes and supporting documents are available from the Legislative Counsel Bureau's Research Library.

The subcommittee adopted 18 recommendations addressing issues in the following general categories:

- Continuation of Nevada's class-size reduction program;
- Alternatives to the practice of "tracking," or grouping pupils by ability;
- Allowing parents to choose which school their child attends;
- Occupational education;
- Successful or innovative teaching methods and procedures;
- Drug therapy and other treatments for hyperactive pupils;
- National education goals; and
- Requirements for high school graduation.

Detailed descriptions and background information for each of these recommendations, along with relevant appendices may be found within subsequent sections of this report. Due to the broad scope of the study, background information concerning a specific subject is presented immediately prior to the issues and recommendations section for each topic.

Also included within the report is a section of selected references with regard to the subjects the committee reviewed.

II. PROGRAM TO REDUCE PUPIL TO TEACHER RATIO

The topic of class-size reduction has been considered during past legislative sessions. Following a review of the topic by a 1988 interim legislative study, the 1989 Legislature considered a number of proposals to reduce the pupil-teacher ratio in public school classrooms. Background information with regard to the concept and the current status of Nevada's Class-Size Reduction Program is contained within the next portion of the report. A discussion of issues and recommendations relating to the program is included.

A. BACKGROUND

Class size is a significant concern to educational leaders at all levels. At the classroom level, class size determines overall workload and is a factor in teacher stress levels. At the district administrative level, class-size policy has a dramatic impact upon budgets, facilities and program planning. Among State policymakers, class size is the single most important factor affecting the overall cost of public elementary and secondary education.

Nationally, class-size reduction has been proposed as one strategy for increasing student achievement. Advocates believe that with fewer youngsters in a classroom, each student will receive more individual attention, the teacher will find the instructional load more manageable, and learning will increase.

Some research concerning the benefits of class-size reduction has been challenged. However, a recent analysis by the United States Department of Education's Far West Laboratory for Education Research and Development concluded that achievement data shows that class size has a substantial and cumulative effect upon student learning. The same report notes that teachers represent a fixed institutional resource with their time and attention divided among the total number of students in the classroom. These results are confirmed in a recent 4-year study of Tennessee's class-size reduction program.

Additional background information concerning the topic of class-size reduction may be found in Legislative Counsel Bureau Bulletin No. 89-3, *Study Of Public Elementary And Secondary Education.*

Nevada's Class-Size Reduction Act

In 1989, the Nevada Legislature enacted the Class-Size Reduction Act (Chapter 864, *Statutes of Nevada 1989*, pages 2104-2111). The measure was designed to reduce the pupil-teacher ratio in the public schools, particularly in the earliest grades and in classrooms where the core curriculum is taught.

The program was to proceed in several phases. The first step reduced the ratio in selected kindergartens and 1st grade. The following phase was designed to improve 2nd grade ratios, followed by 3rd grade reductions and broadening kindergarten assistance. After achieving the target ratio of 15 pupils to 1 teacher in the primary grades, the program proposes the pupil teacher ratio be reduced to 22 pupils per class in grades 4, 5 and 6, followed by a reduction to no more than 25 pupils per class in grades 7 to 12.

Following approval of the original act, class-size reductions were made in 1st grade and certain high-risk kindergartens for the 1990-1991 school year. The 1991 Session of the Legislature enacted Senate Bill 653 (Chapter 518, *Statutes of Nevada 1991*, pages 1604-1606) which provided funding for reducing the ratio of pupils to teachers to 16 pupils per teacher or 30 pupils to 2 teachers in a classroom. The measure made these funds available for the 1991-1992 school year to reduce the ratios in 1st and 2nd grades and selected kindergartens. These reductions were implemented as scheduled.

The bill also authorized funds to reduce the ratio in 1st, 2nd and 3rd grades as well as selected kindergartens for the 1992-1993 school year. Due to the national recession and resulting State budget constraints during 1991 and 1992, Nevada's Governor, Robert J. Miller, asked that the scheduled implementation of 3rd grade class-size reduction be deferred. It is expected that the Legislature will revisit this matter when it meets for the 1993 Legislative Session.

The following table (Figure No. 1) lists pupil-teacher ratios for selected grades. The data reflects the pupil-teacher ratio prior to the enactment of the Class-Size Reduction Act of 1989, compared to the ratio for the 1991-1992 school year. It should be noted that, at present, class-size reduction has taken place only in 1st and 2nd grades and selected kindergartens.

Figure No. 1

PUPIL-TEACHER RATIOS IN NEVADA SCHOOLS KINDERGARTEN THROUGH 3RD GRADE 1989-1990 AND 1991-1992 SCHOOL YEARS

	1989-1990	1991-1992
Kindergarten	21.5	22.9
First Grade	25.4	15.7
Second Grade	25.9	16.3
Third Grade	27.1	28.1 *

* Expenditures of class-size reduction funds by Nevada's school districts for 3rd grade in the 1992-1993 school year were delayed at the request of Governor Robert J. Miller.

Source: Nevada's State Department of Education, 1992.

Expenditures for the Class-Size Reduction Program may be summarized in Figure No. 2.

Figure No. 2

YEARLY EXPENDITURES (IN 1000'S) FOR CLASS-SIZE REDUCTION PROGRAM KINDERGARTEN THROUGH 3RD GRADE (1990-91 THROUGH 1992-93 SCHOOL YEARS)

	Reported 1990-91	Reported 1991-92	Unaudited 1992-93
Kindergarten	$ 742.8	$ 796.3	$ 812.2
First Grade	$15,408.2	$18,124.2	$15,653.3
Second Grade	--	$10,948.9	$15,032.2
Third Grade	--	--	*
TOTAL	$16,151.0	$29,869.4	$31,497.7

* Expenditures of class-size reduction funds by Nevada's school districts for 3rd grade in the 1992-1993 school year were delayed at the request of Governor Robert J. Miller.

Source: Nevada's State Department of Education, and Fiscal Analysis Division, Legislative Counsel Bureau, 1992.

The amounts listed for the 1992-1993 school year in Figure No. 2 are taken from unaudited figures. The actual amounts are expected to change slightly. Based upon this information, the State of Nevada has expended approximately $77.5 million for the direct costs of funding class-size reduction.

Although the 1989 measure appropriated funds for teacher training in small group instructional methods, such funding was not included in the 1991 appropriation bill. In addition, while monitoring of the program's success is required, no specific funds were designated for that purpose in either measure.

Further detail concerning the numbers of teachers hired and student-teacher ratios, by county, may be found in Appendix B of this report, beginning on page 59.

B. ISSUES AND RECOMMENDATIONS

The subcommittee reviewed a number of policy considerations associated with class-size reduction. These include issues such as:

- The need to measure outcomes--defining what is expected from class-size reduction--student achievement, reduced dropout rate, fewer special education referrals, fewer discipline problems, and so on;
- Costs and benefits associated with the existing program;
- Quality of education; and
- Restructuring and capital expenditures--the traditional structure of public schools with single schedule and self-contained classrooms may need to be substantially altered in order to incorporate class-size reduction (i.e., "shift" of pupils per day - some schools do morning sessions and afternoon sessions).

The members of the subcommittee received a number of anecdotal reports and direct testimony that both classroom teachers and pupils were responding favorably to the class-size reduction program. Testimony was also received from the State Department of Education concerning the progress of implementing the required reductions; however, no formal report concerning the success of the class-size reduction effort was presented during the course of the study.

Early indications were encouraging. In a status report presented to the Legislature's Interim Finance Committee, the Clark County School District reported on achievement test results for 1st grade:

> The key finding is a slight increase in first-grade reading and mathematics scores during the 1990-91 school year--the same year that class-size reduction took effect in the first grade--following several consecutive years of decline.

The State Department of Education testified that a comprehensive, statewide evaluation study concerning the effects of the program was being designed for presentation to the Legislature during the 1993 session. Although a report was made to the 1991 Legislature, each school district used different measurements to evaluate and describe the success of the program. A task force was formed following the 1991 session to establish a uniform data collection system to measure and report the results of the program.

Elements of the study include mathematics and reading test achievement scores, along with other variables such as:

☐ Class configuration (self-contained, team-taught, other);

☐ Size of class (as of April 1, 1992);

☐ Length of time in class-size reduction program;

☐ Status as a participant in the English as a Second Language program;

☐ Special education status;

☐ Socioeconomic status (free or reduced lunch, Aid to Families with Dependent Children status);

☐ Ethnicity; and

☐ Gender.

According to the State Department of Education, the study will collect and analyze both qualitative and quantitative data regarding the effectiveness of the Class-Size Reduction Program. A detailed description of the evaluation may be found in Appendix C on page 63 (titled "Class-Size Reduction Evaluation Prospectus").

Based upon the information presented, the subcommittee believes that the Class-Size Reduction Program is beneficial to the education of Nevada's children and should continue. Although recognizing the current budget difficulties facing the State, the members believe that the Legislature has made a long-term commitment to the program, and the effort should continue as planned.

The subcommittee, therefore, wishes to report to the 67th Session of the Nevada Legislature that the members voted to:

> **Adopt a subcommittee resolution urging the 1993 Nevada Legislature to continue the Class-Size Reduction Program.**

A copy of this resolution may be found within Appendix E on page 107.

III. ALTERNATIVES TO "TRACKING" PUPILS

One universal aspect of American public education is the separation of students into grade levels. Perhaps the next most common feature is the classification of pupils within grades into ability groups, a practice generally known as "tracking." Schools use tracking as a way to adjust instruction to the range of student needs, interests and abilities. The operating assumption is that students will learn best when instructional content is matched to individual knowledge and ability. Students are divided into learning groups so that teachers can offer lessons that no student finds too hard or too easy. The common belief is that this procedure will maximize student motivation and learning.

A. BACKGROUND

It is generally believed that the system of ability grouping developed in the late 19th century as a way to train workers for the factories, socialize new immigrants, provide supervision for urban youths, and as an avenue for upward mobility. The system was based upon 19th century assumptions concerning group and class differences, balanced with the belief that schools should prepare students for work and that democratic principles required the extension of secondary schooling to all. Many argue that the assumptions about group and class differences continue to exist today and may still operate within this 19th century grouping structure.

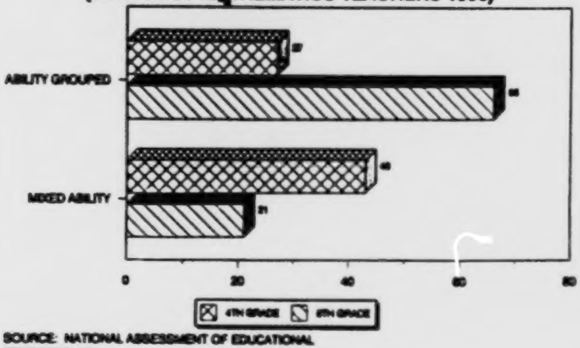
1. *Current Practices*

At present, tracking takes place in one of three ways: grouping within a classroom; comprehensive full-day grouping; or regrouping for specific subject areas. Full-day grouping seldom is done in the early grades; however, most students are tracked by the time they reach high school.

In elementary grades, the practice often occurs within a classroom for a particular subject. For example, it is common practice in early elementary grades to divide students into three reading groups. In middle and high school, the tracked groups are assigned to different classrooms. In high schools, tracking is usually achieved through the three standard curricula choices: academic, general and vocational. Within these tracks, there may be further ability grouping.

The National Assessment of Educational Progress recently measured the prevalence of tracking. The national data (in percentage form) is given in the graph below:

NATIONAL PREVALENCE OF TRACKING
(SURVEY OF MATHEMATICS TEACHERS 1990)



SOURCE: NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS 1992

The same report listed the prevalence of grouping mathematics students by ability in the participating Western States at 64 percent.

2. *Arguments For and Against Ability Grouping*

An increasing number of educators and researchers have criticized tracking in recent years. Critics argue that the practice of grouping students by ability has a number of negative consequences, including:

☐ **Weaker learning environments**--Lower track classrooms are usually assigned the least experienced teachers, even though they enroll the students with the greatest needs; it is also argued that there is an inequitable allocation of experienced teachers and resources to the high-track groups.

☐ **Lower expectations**--Students in lower track classes are often stigmatized with a negative image, resulting in lower self-esteem for these students; in addition, there is less emphasis upon homework and tests, fewer academic demands are made in low-ability groups, and less instructional material is covered in the course of the school year.

☐ **Widening achievement gap**--Research has shown that a student first assigned in a lower track has an even poorer chance to move up to a higher track in the next grade level. The cumulative losses are especially apparent when tracking begins in the elementary grades.

☐ **Resegregation**--Some critics also charge that the practice of tracking is racist, tending to separate minority students into the "average-" and "low-" ability groups. This condition provides minority students with fewer chances to graduate high school and progress to college.

Most of the objections to ending the practice center around the potential effects upon gifted students. Advocates of tracking argue that gifted students may feel unchallenged if grouped with slower students. In addition, gifted and high ability children show positive academic results from some forms of grouping. Others believe that tracking increases self-esteem for low-ability children; that low-ability pupils may feel more competent and self-assured when in a classroom with others of like ability.

3. Research Findings

In recent years, the practice of tracking has been the subject of much review. One researcher, Jeannie Oakes, has conducted considerable research on the effects of tracking. Highlights of her findings include:

- In secondary schools, tracking affects students' access to courses, with lower track students having fewer mathematics and science courses but more access to electives. Low-track classes emphasize low-level topics;
- Several examples of tracking support the contention that teacher and resource quality are more generously distributed in higher tracks;
- There is a "* * * clear pattern of instructional inequities for students placed in low-ability groups";
- Academic learning is emphasized unequally among the tracks, with those in the high tracks receiving most of it;
- Placement within a track affects peer associations in classes and extracurricular activities; and
- Teachers in low-ability tracks generally have less experience, while those in the higher tracks were better organized and more supportive.

In a 1991 report on tracking in the middle grades, another researcher, Jon Slavin, concluded that tracking had essentially no effect on achievement for high-, average-, or low-ability students.

As a result of these and other research efforts, the National Governors' Association (NGA), the Carnegie Corporation and the National Education Association have called for the elimination of tracking, at least as it is commonly practiced.

4. Alternatives to Tracking

Alternatives to comprehensive tracking include outright elimination of the practice in all its forms, or the more pragmatic modifications to ability grouping that a number of schools have adopted. Researchers in the field offer the following approaches:

1. **Postpone tracking**--Defer the practice of tracking as late in the grade span as possible. Elementary grades should use within-class methods only (such as ability grouping in mathematics or reading).

2. **Limit tracking**--Alternatives to comprehensive full-day tracking include certain within-class and regrouping between-class plans. Options include:

    - Regrouping for certain basic academic subjects--as noted earlier, this method is commonly used in elementary schools for reading and/or mathematics; students are kept in mixed classes most of the day, but are regrouped on the basis of their current skills in core subjects. Such a process may be extended to middle and high school settings. One example is the *Joplin Plan* which regroups students for reading regardless of the grade level.

    - Within-class grouping, which assigns students to ability-ranked subgroups for instruction within the classroom. Each subgroup receives instruction at its own level and is allowed to progress at its own rate. Mastery learning is another instructional strategy under the within-class category. Students who test above a certain master level in a subject go on to various enrichment activities, while those in the class scoring below the mastery level receive additional core instruction.

    - Cooperative learning--this process refers to various teaching methods in which students work in small groups toward some sort of group goal. Such groups consist of students from all abilities who study together and complete group assignments. Students are expected to share perspectives in order to help one another master academic content. Reading and composition activities can benefit from this approach.

- Combining approaches--some programs combine cooperative learning and within-class ability grouping. Students work in mixed ability teams on material appropriate to their skill level. In mathematics, the Team Assisted Individualization Program is one example of the combined approach.

3. **Create better placement criteria**--Often a student's rank or report card grade average is used to determine track placement. Performance in each subject should be reviewed; criteria for student course assignments should be current and specific by subject. Such a policy would allow for cases where a student might be placed in an upper track mathematics course and in a lower track English class. School and district officials may need to review tracking placements by sex and ethnicity to guard against placement bias.

Schools attempting to eliminate or modify such an ingrained policy have encountered a number of problems. Experience has shown that schools trying to "detrack" may need to:

- **Provide extra help** to any student having serious difficulties (coaching or peer tutoring).

- **Equip teachers with useful teaching methods**, such as cooperative learning techniques and mastery learning methods.

- **Expand opportunities for all students**, rewarding individual effort and progress. Allowing students to demonstrate competence through different avenues also should be considered.

- **Find alternatives to tracking**, such as continuous progress programs where students complete course units at different rates.

B. ISSUES AND RECOMMENDATIONS

The subcommittee reviewed information concerning the nationwide debate about tracking, and about the difficulties associated with "detracking." The members recognize that tracking structures are firmly grounded in widespread beliefs about human capacity and about individual and group differences. Eliminating tracking is, according to Ms. Oakes, identified earlier:

> * * * an extraordinarily difficult process that must fit the idiosyncrasies of local conditions". [The process involves a] * * * critical and unsettling rethinking of fundamental educational norms.

A number of additional policy considerations were identified as being generally associated with tracking and "detracking." These include issues such as:

- The need for additional training (and the associated funding) to enable teachers to use the innovative teaching methods offered as alternatives to tracking.

- The need to measure the extent of ability grouping and monitor the effectiveness of specific forms of tracking.

- If comprehensive full-day tracking is maintained, equity matters must be addressed, including the quality of instruction and resources in "low-track" classes, along with racial/ethnic inequity.

- Parental attitudes toward the change.

- The use of "gifted" students as role models for other students.

- The impact of tracking upon student behavior and teacher expectations.

The subcommittee reviewed and identified several aspects requiring additional information. A number of researchers had noted the difficulty in measuring the extent of tracking and monitoring its effectiveness. In addition, the effect of tracking upon gifted pupils seems ambiguous in a number of studies. Further, the actual cost of "detracking" schools in Nevada is not known. Information is required concerning any additional costs associated with eliminating the practice, including increased teacher training, added data collection efforts and any new requirements to ensure an equitable distribution of resources among classrooms.

The subcommittee concluded that additional information is required concerning the present form and extent of tracking in Nevada's public schools and that cost and equity issues need to be addressed. Finally, the effects of any such structural change upon students and teachers should be evaluated. The members decided that an agency study conducted by the State Department of Education is the appropriate approach to the issue.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Adopt a resolution urging the State Department of Education to conduct a study concerning the prevalence of "tracking" students in Nevada's public school system, and report the results and recommendations to the 1995 Legislative Session. The study should include, but not be limited to:**
>
> **a. The need for additional teacher training (and the associated funding) to enable teachers to use the innovative teaching methods offered as alternatives to tracking;**
>
> **b. The need to measure the extent of ability grouping and monitor the effectiveness of specific forms of tracking; additional data may need to be collected;**
>
> **c. How equity matters are addressed, including the quality of instruction and resources in "low-track" classes, along with racial/ethnic inequity;**
>
> **d. Parental attitudes toward tracking and "detracking";**
>
> **e. The use of "gifted" pupils as role models for other students; potential impact upon existing programs for gifted students; and**
>
> **f. The impact of tracking upon student behavior and teacher expectations.**
>
> (BDR R-417)

IV. SCHOOL CHOICE

In response to calls for educational reform, State policymakers implemented numerous regulatory changes within the last decade. Twenty-three states, including Nevada, increased high school graduation requirements (see Section IX of this report), nearly every state strengthened teacher certification requirements, 49 states have instituted some type of student assessment program, and 47 states have developed curriculum guides.

At present, states are beginning to shift away from a regulatory approach to an emphasis upon strengthening schools as organizations. Program mandates are being replaced by strategies to empower and to implement effective educational practices in schools. Such business-related concepts as accountability, employee empowerment and decentralization are beginning to appear in educational policy and local district practice. The school choice movement reflects many of these themes.

A. BACKGROUND

School choice, in its broadest definition, gives parents, students, and teachers more educational alternatives and allows them to choose among those options. Within the last 5 years, a number of states have enacted some form of school choice legislation, and at the Federal level, President George Bush made school choice part of the *America 2000* national reform initiative.

Under choice, children no longer are assigned to public schools based solely on where they live. Instead, families pick the schools their children will attend. Schools receive tax dollars based on the number of students they attract. In theory, this injection of free-market incentives allows superior schools to flourish.

Choice options have two basic structural forms--programs which are external to the existing public school system, and those that are internal. External choice programs give parents the opportunity to educate their children in programs outside the public school system. Internal choice options include programs between or within school districts, schools or classrooms; however, all these options operate within the public school setting.

1. *External Options*

The most common proposal for choice operating outside of the public school system involves voucher programs. Such a system involves a tuition certificate issued by government and redeemable at the public or private school of the parent's choice. Advocates of this approach argue that creating a competitive market will improve all schools, lead to greater diversity of educational offerings, improve access to low-income students, and eliminate inferior schools.

Opponents argue that private schools would not have the same accountability for spending public funds; educational standards for textbooks, teacher certification and curricula could not be enforced; such programs violate the constitutional separation of church and state; such plans may lead to resegregation; the public school system will be undermined; upper income families would be the primary beneficiaries; and parents may be swayed to choose a school based upon advertising rather than an objective evaluation of quality.

Other external choice programs are less controversial; these approaches include:

☐ Postsecondary enrollment options which allow high school students the option of taking some courses at a state postsecondary school for either high school or college credit;

☐ Second chance plans which give at-risk students an opportunity to start over in a new school outside their attendance zone, and sometimes outside their school district; and

☐ High school equivalency programs which also exist outside of the daily public school program.

2. *Internal Options*

Those programs operating within the public school system may take two forms: interdistrict and intradistrict options. Intradistrict programs take two common forms:

- **Open enrollment plans** that allow each school within a district to draw students districtwide; and

- **Magnet schools** that provide special curriculum designed around a specific theme, structure and/or method of instruction. For example, an emphasis may be placed upon mathematics and science, or upon the arts. Magnets also differ from "regular" schools since enrollment is open to students beyond the geographic attendance zone, and students and parents choose the school.

More than 15 states have special state-supported schools in science and mathematics, and some have special state-operated high schools open to all state students. In many cases, local school districts operate magnet schools with funding from Federal, state and local money.

Magnets were developed by large urban school districts in the 1970's primarily as an aid to desegregate schools. This approach has spread throughout the Nation, and at present, districts which have such schools usually have long waiting lists. Magnets are generally perceived to have one or more of the following characteristics:

☐ Program coherence;

☐ A safer, more orderly climate including an environment conducive to learning and an image of excellence;

☐ A sense of shared enterprise and a committed enthusiastic faculty and student body;

☐ Career preparation--a focus upon an occupation or field of study;

☐ A committed administrative staff;

☐ Implementation of educational reforms; and

☐ School autonomy.

In contrast, interdistrict programs allow students to attend a public school outside of their home district. At present, Arkansas, Iowa and Minnesota have the most comprehensive open-enrollment plans. Parents may send their children to any school within these states, with minor restrictions.

3. School Choice in Nevada

Nevada currently authorizes limited interdistrict school choice under *Nevada Revised Statutes* (NRS) 392.010, "Admission of pupil from adjoining state or district; payment of tuition for pupil attending school in adjoining district or state; agreement for payment of tuition, transportation and other costs," and NRS 392.015, "Admission of pupil from Indian reservation in school nearest pupil's residence; reimbursement for additional costs of transportation; exceptions." It appears that these statutory provisions are used primarily in the rural school districts.

Under NRS 388.040, each school district has the power to zone the district and to determine which pupils shall attend each zone. Although most, if not all, the school districts allow variances for pupils to attend schools outside their zone, there is no policy at the State level that requires or encourages intradistrict school choice.

In a few cases, intradistrict choice has been realized through magnet schools in Nevada. Examples of magnet high schools for vocational education include both the Area Technical Training Center and Southern Nevada Vocational Technical Center in Clark County. Districtwide alternative high schools include Sunset High School in Las Vegas and Washoe High School in Reno.

B. ISSUES AND RECOMMENDATIONS

During the course of its study, the subcommittee received extensive testimony and documentation with regard to problems and concerns surrounding the implementation of any of the school choice options. In general, issues relating to these alternatives include the following common concerns:

- The **effectiveness** of any new program or approach should be documented for accountability purposes. Any evaluation of a specific program will require the systematic collection of controlled data.

- **Equity matters** must be monitored--opponents of school choice charge that these programs "cream off" talented students into the "better" schools and "dump" the remainder in the traditional school system. Retention and placement procedures will require close examination.

- **Resource allocation** matters require attention, including transportation decisions, and shifting of funds from repair of older buildings, among others.

- **Sociological/psychological** issues also exist, including parental involvement, multi-cultural curricula, and bilingual studies. In addition, questions have been raised about whether all parents are able to make informed choices concerning a school, and about the psychological impact upon children remaining at a neighborhood school.

1. Magnet Schools

The members of the subcommittee received favorable testimony about the concept of magnet schools from nearly all parties involved in the school choice debate. Nevada's Superintendent of Public Instruction supports expanding the magnet school concept in Nevada from its current emphasis upon occupational education to include other specific subjects or specialized curriculum. The members agreed that this approach to public school choice should be explored, and that an accountability component be included to measure the success of the program.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Include a statement in the final report recommending that Nevada's school districts expand the magnet school concept from its current occupational education emphasis to include additional curricular areas** (for example, fine arts, languages, mathematics and science). **The districts are**

encouraged to publicize the differences among the magnet schools and establish an accountability system.

2. *Voucher System*

The members received extensive testimony concerning existing and proposed voucher systems for public/private school choice programs. In addition to testimony favoring this approach, the members reviewed arguments opposing voucher systems. Due to the lack of a consensus among the parties, because of the divisive nature of the issue and because of certain constitutional concerns, the members concluded that such a program was not workable in Nevada.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Include in the subcommittee's final report a statement concluding that a school choice voucher system involving private schools is not feasible in the State of Nevada at this time.**

V. OCCUPATIONAL EDUCATION

During its work session, the members of the committee considered two recommendations relating to occupational education. Both proposals originated with an earlier interim study about the topic, and each has been considered by previous legislatures.

In 1987, the 64th Session of the Nevada Legislature adopted Senate Bill 165 (Chapter 743, *Statutes of Nevada*, pages 1820-1821). The measure directed the Interim Finance Committee to conduct an interim study to determine the appropriate methods of funding occupational education in Nevada. The subcommittee issued a series of recommendations designed to restructure Nevada's system of occupational education.

In 1989, the Legislature adopted several of the subcommittee's proposals, and the 1991 Session enacted legislation incorporating two and a portion of a third of the study's four major recommendations involving significant appropriations and program restructuring.

The two components that were considered, but not adopted, concerned:

- Appropriating funds for the enhancement of occupational education in grades 9 through 12; and
- Establishing and funding a program in home and career skills for all pupils in grades 7 or 8.

The following sections contain background information for each of these two proposals. Much of the information concerning the recommendations has been extracted from the 1988 interim study report. A full discussion of each topic may be found in Legislative Counsel Bureau Bulletin No. 89-10, *Interim Finance Committee's Subcommittee On Occupational Education.*

A. FUNDING FOR THE ENHANCEMENT OF OCCUPATIONAL EDUCATION

The first of these recommendations proposes funding for school districts to support the "excess" cost of occupational education programs. A base grant of $25,000 is provided to each school district, with the remaining amount to be distributed by a formula which recognizes Nevada's educational financing system (the Basic Support Per Pupil formula), as well as occupational education enrollment.

1. Background

The 1988 legislative study found that occupational education programs cost an additional 52 percent above other academic programs. The total "excess" cost reported in 1987-1988 was $8.8 million. The current recommendation would guarantee 25 percent of the total 1987-1988 excess cost to school districts which operate occupational education programs. The dedicated fund is expected to provide school districts with resources to maintain and improve high school occupational education programs giving local school administrators the resources necessary to implement the State Board of Occupational Education's "Course of Study for Occupational Education."

This course of study recognizes standards or criteria under which occupational education programs are to be maintained and improved. These standards will include local business- and industry-validated curriculum; revised curriculum including applied academics--mathematics, science, and communications skills; employment skills--cooperative behaviors, work ethics, problem solving; and so on, all related to the technology associated with the occupation. Under these standards, pupils will be prepared to enter community colleges and other post-secondary programs. Each student will be provided with an individualized certificate listing academic, employment and technical skill competencies.

The 1988 study committee also concluded that the current funding mechanism does not provide adequate support to guarantee that all Nevada pupils have access to quality occupational education programs. Current methods of financing education in Nevada put the existence, improvement and maintenance of occupational education programs at risk. This situation occurs because of competing priorities at the local level regarding "elective" programs--especially high-cost elective programs such as occupational education. Over the last decade, both teachers and courses have experienced a decline, as shown in Figure No. 3

Figure No. 3

CHANGE IN OCCUPATIONAL EDUCATION TEACHERS AND COURSES IN NEVADA 1979-80 TO 1989-90

	Percentage Change 1980-90
Middle Grades (7-9)	
Teachers	-45.47 %
Courses	-46.27 %
Secondary Grades (10-12)	
Teachers	-34.07 %
Courses	-36.87 %

The 1988 subcommittee concluded that the current system of funding had proved to be ineffective and that occupational education has not had the resources to move it from the so-called "smokestack" manufacturing orientation, to a curriculum that addresses the needs of a post-industrial society. That body proposed:

- Requiring the State Board of Occupational Education to establish standards for occupational education classes and programs;
- Establishing a separate fund to enhance occupational education;
- Providing a formula for distributing funds from the account; and
- Appropriating funds to the special account.

According to testimony before the 1991 Legislature, funding for this proposal could be used for hiring additional instructors, purchasing occupational equipment and instructional materials, or the renovation/remodeling of occupational learning laboratories.

During the 1991 Legislative Session, Assembly Bill 103 (Chapter 637, *Statutes of Nevada*, pagaes 2086-2088), carried most of the remaining occupational education proposals made by the 1988 subcommittee. However, as the bill moved through the legislative process, nearly all of the funding and the formula for distribution for occupational education in grades 9 through 12 was removed from the measure. The program structure, the requirement for standards, and the provision establishing a specific fund for occupational education were retained.

According to testimony before the Assembly Committee on Ways and Means (May 30, 1991), advocates for the occupational education program agreed to these amendments to A.B. 103 in order to retain a component that started the new occupational education program in the middle school grades; in exchange, expansion of the program to grades 9 through 12 would be delayed until a future session.

2. *Issues and Recommendations*

Although the 1991 Legislature approved the creation of the fund and the requirement that the State Board for Occupational Education establish standards for programs, no funding was provided. In addition, the program standards were established by the board, based upon the *The Nevada Business Plan for Education*, but are elective, since funding was not provided. As of November 1992, no funds had been deposited to the special occupational education fund.

While the members recognize the State's current fiscal difficulties, since the funding of this program is part of the integrated strategy for Nevada's occupational education program, the committee agreed to submit the funding proposal to the 1993 Legislature for reconsideration.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Make an appropriation to the State Treasury to the special fund for the enhancement of occupational education in Grades 9 to 12. The money is to be used to establish classes in Grades 9 and 10 on occupations in general, and to improve occupational classes for pupils in Grades 10, 11 and 12. The money shall be distributed to the districts according to a formula using a base allocation and proportional enrollment. Funding in the amount of $2,252,781 for each year of the next biennium is appropriated from the State General Fund for this purpose.** (BDR 34-425)

B. HOME AND CAREER SKILLS FOR ALL PUPILS IN GRADES 7 OR 8

The second occupational education recommendation involves establishing and funding a program in home and career skills for pupils in grades 7 or 8. As noted in the previous section, this proposal originated with an earlier interim study about the topic, and has been considered by previous legislatures.

1. *Background*

The 1988 subcommittee was told that in order to prepare for the future, pupils would need instruction to develop:

- Skills that lead to effective decisionmaking, management and problem solving;

- Concepts and skills basic to family and home responsibilities; and

- Personal skills which will enhance employment and employment retention potential.

The new program of "home and career skills" was proposed that would assist adolescents in living in a society of constant change and improve their quality of life by preparing them to meet their present and future responsibilities as consumers, family members, home managers and wage earners. Citizens need to be able to benefit from experience, make sound decisions, manage resources, solve problems and think constructively. The proposed program is based upon:

- **Process skills** - Pupils receive information concerning decisionmaking, leadership and management skills and problem solving which are applicable to all areas of daily living;

- **Personal development skills** - Pupils apply decisionmaking skills to learn about themselves, their individual lives and their relationships with others;

- **Personal and family resource management** - Pupils apply their decisionmaking and management skills to the resources in the world around them, including how they dress, how and what they buy, what they eat and where they live; and

- **Career Planning** - Pupils begin to make decisions and solve problems related to tentative career directions.

The program is expected to use a "hands on" experiential approach so that knowledge and principles are applied in a planned sequential manner. Community involvement, real life tasks and simulations would make the program both interesting and relevant. The 1988 legislative subcommittee concluded that a program based upon these objectives would be needed by all pupils if Nevada is to prepare its youth for future decisions related to both career and personal goals.

2. *Issues and Recommendations*

While the members recognized the State's current fiscal difficulties, since the recommendation is part of an integrated strategy for Nevada's occupational education program, the committee agreed to submit it to the 1993 Legislature for reconsideration.

Funding for the current recommendation is the same amount as was requested in 1991, and was provided by the State Department of Education. The proposal asks for $12,180 for 113, 7th and 8th grade classrooms for one-time equipment costs, for a total appropriation of $1,376,340.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Require, by statute, a one-time appropriation, that the State Board of Education adopt regulations to establish a course of study relating to home and occupational skills. The course would be offered in the 7th and/or 8th Grade, and would instruct students in skills relating to making decisions, solving problems, and management and leadership. Students would learn to apply these skills in all areas of daily living. Funding in the amount of $1,376,340 for Fiscal Year 1994 only is appropriated from the State General Fund for this purpose.** (BDR 34-426)

VI. SUCCESSFUL TEACHING METHODS AND PROCEDURES

In the course of its study, the subcommittee reviewed many innovative teaching methods and procedures. In general terms, there appears to be a number of policies, such as school-based decisionmaking, that can be implemented to encourage innovation.

The subcommittee's attention was drawn to three topics under the general issue area of successful, innovative teaching methods and procedures. Two involve existing programs (the Nevada School Improvement Project and the National Council for Teachers of Mathematics [NCTM] standards for math). The third issue involves modifying the school day to improve instructional activities.

A. NEVADA SCHOOL IMPROVEMENT PROJECT

The Nevada School Improvement Project is one example of a statewide program designed to encourage innovative solutions to site-specific needs and problems .

1. Background

The State Department of Education initiated the statewide Nevada School Improvement Project in 1986. The process involves the entire staff of a school in assessing the school's needs, and using that information to plan and implement school-wide improvement activities. Department consultants provide training to the staff at individual schools to implement the school improvement process and offer follow-up assistance and coaching to maintain the school improvement momentum.

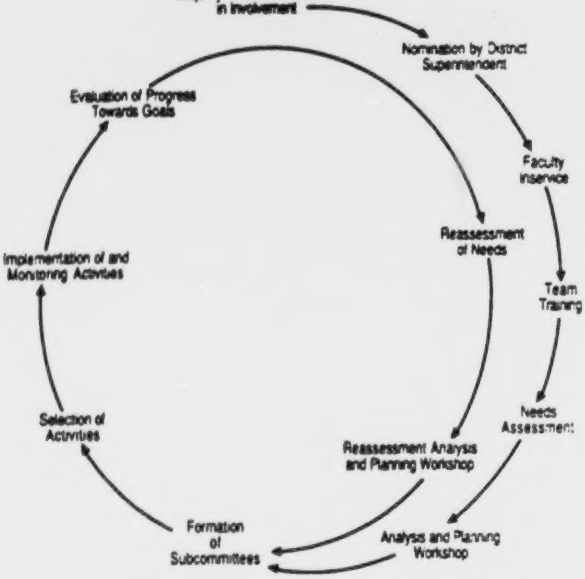
The school improvement process operates in five distinct phases:

- Orientation of staff through faculty training sessions;
- Organization of the school improvement project teams and the formulation of the team's mission;
- Data gathering by the teams in order to perform a needs assessment;
- Planning and selecting improvements based upon an analysis of the data gathered in the previous phase;
- Implementing and monitoring of improvement activities.

Follow-up activities involve an evaluation of progress toward achieving goals and analysis and reassessment of needs. Figure No. 4 presents a graphic representation of the process:

THE NEVADA SCHOOL IMPROVEMENT PROJECT

STEPS IN THE PROCESS


Majority of Staff Interested in Involvement
Nomination by District Superintendent
Faculty Inservice
Team Training
Needs Assessment
Analysis and Planning Workshop
Formation of Subcommittees
Selection of Activities
Implementation of and Monitoring Activities
Evaluation of Progress Towards Goals
Reassessment of Needs
Reassessment Analysis and Planning Workshop

During the implementation phases, schools operate the program entirely as a volunteer effort with no outside funding to the school sites. As a rule, non-instructional activities are implemented during the first year of the program; instructional changes are generally implemented the following year to allow for appropriate changes in curriculum plans and staff training, if needed.

Often activities identified by the staff involve expenditures. For example, a school might identify a goal to provide additional assistance to "at-risk" students. The activity selected to address this goal might involve the purchase of a specific computer software system and teacher training in working with at-risk pupils.

A 1990 study of the project by the Far West Laboratory for Educational Research and Development noted that first year project schools tended to focus upon less intrusive improvement objectives, such as improving the school's physical environment or general administrative procedures. Schools that had been involved with the process for a longer time tended to confront more difficult improvements in the instructional process, such as coordination of what is taught within grade levels, and sophisticated classroom assessment methods.

The program has grown from 10 pilot schools in 1986, to 95 participating schools in 1992, nearly one-quarter of all the schools in the State. Project schools are currently operating in 15 of the 17 school districts in Nevada.

2. Issues and Recommendations

The members of the subcommittee reviewed testimony and documents submitted by the State Department of Education concerning the Nevada School Improvement Project. The subcommittee was especially interested in the program's emphasis upon site-based management issues and school-specific identification of improvement activities.

Although the subcommittee noted that funding for the project's proposed follow-up small grant program was not feasible in the current fiscal environment, the members believe that the project has had an excellent effect upon participating institutions and should be expanded to other schools in Nevada.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Adopt a resolution, directed to all public schools, urging participation in the State Department of Education's Nevada School Improvement Project. (BDR R-419)**

B. SCHOOL DAY SCHEDULE

The subcommittee also reviewed possible options to modify or extend the school day in the context of accommodating innovative programs or reform efforts.

1. Background

The members of the subcommittee were informed that the average classroom teacher encounters numerous interruptions of instructional time during the school day. These breaks in instructional time may take the form of school announcements, administrative functions, classroom management problems, assemblies or even moving all or part of a class to other locations for weekly activities such as library or music classes. These interruptions pose a problem for educational continuity, especially in the elementary grades.

Testimony by the Nevada State Education Association indicates that such disruptions are commonplace and can interfere with the learning process. Decreasing classroom interruptions would allow for more academic instruction, increasing actual teaching time.

One elementary school in another state, for example, divides the school day to devote a 3-hour block of uninterrupted time exclusively to instruction in core academic subjects. Instruction is protected from all interruptions. School assemblies, office announcements, and students changing classes occur only during the remainder of the day. A number of other schools, nationwide, have adopted similar scheduling plans.

2. *Issues and Recommendations*

The subcommittee determined that instructional "time on task" was a key factor in successful instruction in core academic subjects in the elementary grades. There is common agreement that the number of distractions and interruptions during the school day should be reduced to allow teachers time to teach.

The subcommittee believes that one of the best options for attaining this goal involves setting aside a period of uninterrupted teaching time during each school day. Further, the members believe that each school district in this State should be encouraged to review this proposal for possible implementation.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Adopt a resolution, directed to Nevada's school district boards of trustees, urging the adoption of a daily class schedule in each public elementary school that includes a fixed period of uninterrupted teaching time during each school day.** (BDR R-421)

C. MATHEMATICS ASSESSMENT AND INSTRUCTION

The members of the subcommittee also listened to several presentations concerning Nevada's progress toward implementing the national standards for mathematics assessment and instruction.

1. Background

Since the mid-1980s, the mathematics education community has pursued a coordinated and broad-based reform plan for school mathematics. In March 1989, the National Council of Teachers of Mathematics, issued a document titled *Curriculum and Evaluation Standards for School Mathematics.* This report, and its companion document *Professional Standards for Teaching Mathematics* (1991), call for a revolution in mathematics education. Key elements of the strategy are new, more demanding standards for what is taught in mathematics and how it is taught.

The NCTM proposes dramatic changes in many areas. The new standards specify that mathematics curriculum should emphasize problem solving, communicating about mathematics, and making connections between math topics. The changes also broaden the traditional scope of mathematics topics studied to include more statistics and probability.

Highlights of the recommendations include the following:

- Students need to experience genuine, hands-on problems regularly;

- Instruction should emphasize "doing" rather than "knowing";

- Computation skills should not be prerequisite for working with word problems--experience with problems helps develop the ability to compute;

- Calculators should be available to all students at all times, and every student should have access to a computer for individual and group work; and

- For grades 9 through 12, all students should experience a core program, which should vary for college-bound students only in depth and breadth of treatment and the nature of applications.

The standards call for all students to develop mathematical power--the ability to use math to solve nonroutine problems, to reason logically, and to communicate thoughts and ideas using the language of mathematics. To accomplish this, schools must go beyond basic skills of arithmetic to focus upon developing students' abilities to integrate, synthesize, and apply mathematical knowledge and data to solve complex problems.

The teaching standards emphasize that teachers are the key to changing mathematics teaching and learning, and that they must have long-term support and adequate resources. The teaching standards recommend a shift toward:

- Classrooms as "mathematical communities";

- Logic and mathematical evidence as verification--away from the teacher as the sole authority for right answers;

- Conjecturing, inventing and problem solving--away from merely emphasizing finding the correct answer.

Preliminary findings by the NCTM show that the standards are beginning to be implemented within most elementary school classrooms; however, changes at the high school level have proceeded at a slower pace.

2. *Issues and Recommendations*

The subcommittee received testimony concerning the proposed mathematics assessment and instructional standards. The members also received testimony and reviewed sample assessment methods currently in place in some Nevada schools.

The subcommittee learned that many States are rewriting their mathematics curriculums to include the standards. According to a recent survey, 34 states (including Nevada) have revised, or are in the process of revising, their curriculum frameworks based upon the NCTM standards. In addition, a number of national assessment efforts, like the National Assessment of Educational Progress, are using the standards in developing mathematics tests.

The members also noted that prospective employers emphasize the need to have students knowledgeable enough to be "problem solvers" once they enter the work force. The committee also acknowledged that training teachers to utilize innovative techniques relevant to the new approach is critical to the quality education of children.

3. Curriculum and Evaluation Standards

The members of the subcommittee were unanimous in their support for ongoing efforts within the State to include the new NCTM standards into Nevada's system of public instruction. The State Board of Education has adopted the Nevada State Course of Study for Mathematics, based upon the NCTM standards. This course of study, effective July 1, 1994, establishes goals and objectives with regard to mathematics curriculum. The local school boards are expected to build the actual instructional guidelines based upon these broad principles. Although these standards have been adopted by the State board and are being incorporated into the instructional framework, the subcommittee wished to add its support to the process.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Adopt a resolution, directed to the State Board of Education, supporting the following for Nevada's public schools:**
>
> **a. Implementing the National Council of Teachers of Mathematics curriculum and evaluation standards;**

b. Implementing the Nevada State Course of Study for Mathematics;

c. Aligning assessment with the revised Nevada State Course of Study for Mathematics and the National Council of Teachers of Mathematics curriculum and evaluation standards;

d. Promoting equity in mathematics education for all students; and

e. Using technology and concrete materials for instruction as well as assessment.

(BDR R-420)

4. Support for Reform Efforts

The subcommittee also learned that a number of efforts are in progress to obtain grants from the National Science Foundation and others to assist with the implementation and evaluation of the standards. A common requirement of such grants involves evidence that a state is committed to educational reform in general, and mathematics reform in particular.

At the request of mathematics instructors and representatives of State and local educators, the subcommittee agreed to place a formal statement in the report with regard to its support for these processes.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

Include in the subcommittee's final report a statement directed to the State Board of Education, expressing support for statewide reform in mathematics education, and support for State matching funds to obtain possible Federal grant money. Include in the statement that Nevada currently supports education reform in general, and mathematics reform indirectly, through its current program of class-size reduction. Such a declaration is expected to facilitate applications for Federal funds for statewide mathematics initiatives.

5. *Staff Development*

The NCTM standards represent a unique consensus strategy developed by educators, rather than one which was imposed upon them. Most school administrators are aware of the standards and recognize the need for in-service training and long-term support to help teachers implement the standards. Nationally, school districts that do provide strong staff development have seen an acceleration of the process of implementing the standards.

The members of the subcommittee recognize that a coordinated training effort for mathematics teachers would help speed up the process of implementing the new standards within Nevada's public education system.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Include a statement in the subcommittee's final report expressing support for implementing and funding the reform of mathematics education in Nevada through a systematic program of staff development designed to implement the revised "Nevada State Course of Study for Mathematics." Such a program would include instructional strategies, content knowledge and alternative/authentic assessment. The program is designed to improve students' understanding and achievement in mathematics.**

6. *Assessment*

The NCTM standards advise using multiple assessment techniques including written, oral and demonstration formats. Specific recommendations include the following:

- Assessment should yield information about students' abilities to apply knowledge to solve problems, to use mathematical language to communicate ideas, and to reason and analyze; and

- Assessment should provide evidence that students can formulate problems, apply a variety of strategies to solve problems, verify and interpret results, and generalize solutions.

The members of the subcommittee recognize that the new standards for mathematics instruction require that assessment methods also be revised. The new emphasis upon problem solving and reasoning abilities is not compatible with the traditional multiple choice method of testing.

New techniques for assessment must be used, including "portfolio assessments" which examine the entire body of the student's work. These kinds of tests must be scored by people, not computers, and are, therefore, more expensive. The subcommittee believes that the benefits of the new mathematics standards are, therefore, worth the cost of revising the assessment process.

The subcommittee, further, recommends that the 67th Session of the Nevada Legislature:

> **Include a statement in the subcommittee's final report expressing support for implementing and funding the development of forms of alternative assessment, including portfolio assessments, to expand and align mathematics assessment with the revised "Nevada State Course of Study for Mathematics."**

VII. HYPERACTIVE PUPILS

A. BACKGROUND

The drug Ritalin is commonly recommended for children who suffer from hyperactivity, or Attention Deficit-Hyperactivity Disorder (ADHD). Ritalin, made by Ciba-Geigy Corporation, is the brand name of the drug methylphenidate.

The substance is a stimulant that has a calming effect on children, redirecting activity and allowing a child to concentrate on specific tasks. In the late

1980's, a number of lawsuits were filed alleging inappropriate use of the drug and, in one case, a violation of an individual's constitutional right to privacy. Although the substance has been in use for over 30 years, there have been allegations of misuse centering around the following:

- Failure by parents and physicians to administer appropriate diagnostic tests for hyperactivity;
- Inappropriate prescribing for children with behavior disorders other than ADHD; and
- Infrequent monitoring of the child during the course of therapy.

Opponents of drug therapy argue that psychostimulant drugs are inappropriate for young children, that they foster drug dependence and substance abuse later in life. They also argue that side effects from the drug may be serious. Controversy also exists over the diagnosis of ADHD and the true number of children affected.

Defenders of the use of drug therapy argue that it allows otherwise problem pupils to view themselves as competent and successful. It allows the pupil to be more attentive in the classroom which provides for a less disruptive environment for other students, as well.

B. ISSUES AND RECOMMENDATIONS

The subcommittee received considerable testimony from parents of hyperactive children concerning their interactions with local school district officials. Problem areas identified in testimony include:

- Appropriate prescribing of psychostimulant drugs, including Ritalin.
- Monitoring issues.
- Communication difficulties among parents, physicians and teachers.

- Alternative approaches to treating pupils with ADHD.

1. Informed Consent

The subcommittee received testimony from a number of parents concerning the side effects of medications used to control Attention Deficit Disorder (ADD) and ADHD. Many stated that the adverse effects of the drug were not discussed with them when the drug was prescribed.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Require, by statute, that a physician obtain an informed consent form signed by a parent before a child is placed on Class II drug therapy. The form shall be prepared by the State Board of Health in the Department of Human Resources and should include, but not be limited to, a list of potential side effects of the drug, a description of the need for continuous monitoring by a physician, and a description of alternative therapies. (BDR 40-422)**

2. Appropriate Diagnosis

The proper diagnosis of the disorder is also a concern. Although the medical diagnoses of ADD and ADHD are legally performed only by physicians, a multidisciplinary approach may be appropriate. A number of critics claim that there is a high percentage of inappropriate diagnosis of the disorder.

It was suggested that a referral network of physicians should be identified to allow parents to seek an informed medical diagnosis. According to testimony, although any physician may make the diagnosis and prescribe drug therapy, a number of physicians, either by training or by experience, are well versed in screening for and diagnosing this disorder.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Require, by statute, that the State Board of Education adopt regulations to establish a diagnostic referral network to ensure that children suspected of having Attention Deficit Hyperactivity Disorder be evaluated and diagnosed by a physician who is an expert in screening such cases on a regular basis.** (BDR 34-424)

3. Coordinated Approach

The members of the subcommittee learned that a number of parents had experienced difficulties with school administrators and teachers in accommodating the needs of their ADHD youngsters.

Often special education placements are made when a child requires only minimal accommodation within the regular classroom environment. In addition, the often inappropriate behavior of children with ADHD leads to disciplinary problems. A number of parents noted that children with ADHD seem to need a structured classroom environment in order to succeed and avoid disciplinary problems.

Upon discussion by the subcommittee, it was recommended that all the parties involved or affected by the education of children with ADHD need to cooperate with one another to address the special needs of this group of children. The members of the subcommittee agreed that a coordinated policy toward evaluating and treating children with ADHD is necessary.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Adopt a resolution urging the State Board of Education to adopt a policy of cooperation with medical facilities, educators, physicians and psychologists, school counselors, social workers, marriage and family therapists, and parents to facilitate the diagnosis and treatment of Attention Deficit Hyperactivity Disorder and Attention Deficit Disorder.**
>
> **Further resolve that proper classroom placement, physical education programs, behavior modification strategies, counseling, and concurrent drug treatment be attempted.** (BDR R-423)

VIII. NATIONAL EDUCATION GOALS

The subcommittee adopted a number of recommendations, including those addressing mathematics achievement and testing issues, that relate directly to the National Education Goals. The goals were designed to provide a common framework for education reform.

A. BACKGROUND

In September 1989, President Bush and the Nation's governors announced six national goals for education to be achieved by the year 2000. The goals (listed below) represent the first national standards for education and call for significant changes and improvements in the current system.

NATIONAL EDUCATION GOALS

By the year 2000:

1. All children in America will start school ready to learn.
2. The high school graduation rate will increase to at least 90 percent.
3. American students will leave grades 4, 8, and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, history, and geography; and every school in America will ensure that all students use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment in our modern economy.
4. United States students will be first in the world in science and mathematics achievement.
5. Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.
6. Every school in America will be free of drugs and violence and will offer a disciplined environment conducive to learning.

The goals represent a broad national consensus about the direction of education reform and the new partners to be involved in the effort. In their joint report, the President and the National Governors' Association acknowledged these goals to be ambitious, but their adoption allows for the creation of clear objectives that will enable the Nation to design and evaluate reform efforts. Both the President and the governors believe that the degree of success achieved in realizing these goals is directly linked to the Nation's future competitive position in the global economy.

The NGA's Task Force on Education sees the national goals as a starting point for state and local reform efforts. According to the NGA, the targets provide a common vision, a common language and common method of organizing education reform issues. A number of states and individual school districts have responded by adopting versions of the goals.

In 1990, the governors and the President established a panel to monitor and report on progress toward meeting the national goals. In September 1991 and again in September 1992, the National Education Goals Panel issued its annual report card to the Nation on progress toward achieving the national standards.

A copy of the full text of the National Goals for Education, including specific objectives associated with each one, may be found in Appendix D of this report on page 73.

B. ISSUES AND RECOMMENDATIONS

Over the course of the interim, the members of the subcommittee received testimony from educators and parents about various public education reform programs. Certain of these, including the Nevada School Improvement Project and the Nevada State Course of Study for Mathematics, received support from the subcommittee and are addressed in Section VI of this report.

Among the proposals considered by the members was a resolution submitted by the Parents Advisory Resource Committee of Boulder City. The resolution was originally presented to the Nevada Parent Teachers Association and calls for the adoption of the National Education Goals, as modified to address Nevada students.

In addition, in March of 1992, Governor Robert J. Miller announced the Nevada 2000 program to begin a statewide dialogue on education, with the national goals serving as its foundation. Leaders of the effort plan a conference on the subject in February 1993 and propose to survey Nevada's school districts and businesses concerning local initiatives relating to the goals.

After reviewing a number of innovative programs, both planned and operational, the subcommittee endorsed the concept of supporting the modified version of the national goals for use as a possible framework for State and local activities.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Adopt a resolution, directed to the State Board of Education, supporting the National Education Goals. The six goals, modified for Nevada, specify that by the year 2000:**
>
> **a. All children in Nevada will start school ready to learn;**
>
> **b. The high school graduation rate will be at least 90 percent;**
>
> **c. Nevada students will have demonstrated competency in challenging subject matter, and that every school will ensure that students use their minds well;**
>
> **d. Nevada students will be ranked among the top 10 percent of the Nation in mathematics and science achievement;**
>
> **e. Every school in Nevada will be free of drugs and violence and offer a disciplined learning environment; and**
>
> **f. Every adult in Nevada will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.**
>
> (BDR R-427)

IX. HIGH SCHOOL GRADUATION REQUIREMENTS

Each state imposes its own set of prerequisites for graduation from high school. During the course of its study, the subcommittee reviewed information concerning potential problems regarding Nevada's requirements. Past actions by the State Board of Education imposed additional credit requirements for graduation. According to testimony, these mandates have forced some high schools to restructure the school day. Two recommendations were made concerning this issue.

A. BACKGROUND

In 1963, the State Board of Education regulations mandated that students take eight units of required classes, plus 10 elective units for a total of 18 total credits. By 1987, students needed to earn 14 credits in required courses, plus 8.5 electives units for a total of 22.5 credits. In 1987, the State Board of Education, under its statutory authority, adopted regulations that added 3.5 units to the list of "required" credits needed for graduation. This change reflects a trend in Nevada (and in other states, as well) over the last few decades toward increasing graduation requirements.

The changes made by the board in 1987 were in response to the 1983 report *A Nation at Risk*. This document concluded that our educational system was graduating students who were not prepared with the academic skills needed to enter the work force. The report noted:

> The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people.

Many states, including Nevada, responded by implementing broad policy mandates, such as increasing the number of units required for high school graduation and imposing accountability standards.

In Nevada, the number of units required for graduation increased from 20 units in 1987 to the present 22.5 units. This increase reflects a trend that began in the 1970s. The changes from 1963 to the present may be seen in Figure No. 5 which appears on the following page.

Figure No. 5

REQUIRED COURSES FOR GRADUATION FROM HIGH SCHOOL IN NEVADA (1963-1987)

Minimum Required Course	1963	1973	1982	1987
American government	1.0	1.0	1.0	1.0
American history	1.0	1.0	1.0	1.0
Arts and Humanities				1.0
English	3.0	3.0	3.0	4.0
Health education		.5	.5	.5
Mathematics	1.0	1.0	2.0	2.0
Physical education	1.0	2.0	2.0	2.0
Use of computers				.5
Science	1.0	1.0	1.0	2.0
Required Credits	8.0	9.5	10.5	14.0
Elective Credits	10.0	9.5	9.5	8.5
TOTAL CREDITS	18.0	19.0	20.0	22.5

The 1987 regulation added two categories of units--arts and humanities (1 credit), and use of computers (1/2 credit). Existing requirements for English and science increased by one unit each. While the board increased the "required" credits by 3.5 units, it also lowered the elective credits by one unit. As a result, the total units now needed to graduate are 2.5 credits higher that the total required in 1982.

B. ISSUES AND RECOMMENDATIONS

Although the new requirements were adopted 1987, seniors graduating in 1992 were the first group expected to meet these standards. During the subcommittee's tour of Cimarron-Memorial High School, problems with this policy were raised. With the increased number of units required for graduation, students have less margin for error in selecting and successfully completing the appropriate courses. Students who miss school or fail to get a passing grade in a few classes may find it structurally impossible to make up the missed units and still graduate within the traditional 4-year time period.

1. Summer School

In order to address these shortages in the required units, some students may be able to take summer classes. In Nevada, summer school is offered in a number of school districts. However, students (or more properly, their parents) must pay for the schooling. Such a policy may be discriminatory with regard to certain low-income students who cannot afford to pay this fee. The members are of the opinion that the State Board of Education should review and address this matter.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Include in the subcommittee's final report a statement supporting funding to allow school districts to offer tuition-free summer school for certain youths from financially needy families. Such a program would, among other things, assist students needing additional units to satisfy requirements to graduate from high school.**

2. Policy Review

As noted earlier in this report, a number of states took actions similar to that of Nevada by increasing the number of units required for graduation. Several states mandated longer school days to accommodate these increases. Although a number of school districts have acted to increase the number of periods within a school day, the committee found that the matter needs to be reviewed at all levels:

- The State Board of Education and the Legislature should review the need for the increased number of units; and

- The school districts should review any special requirements for graduation (units required in addition to the state requirements, for example) and consider increasing the length of the school day.

The subcommittee, therefore, recommends that the 67th Session of the Nevada Legislature:

> **Include in the subcommittee's final report a recommendation that each school district review requirements for graduation, including the State's requirements, to ensure that students have sufficient time to accumulate the units needed to graduate within 4 years. School districts should consider lengthening the school day, if necessary, to accomplish this objective. Further, recommend that the Legislature review the total units required for graduation from high school.**

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XI. APPENDICES

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APPENDIX A

Assembly Concurrent Resolution No. 85
(File No. 183, *Statutes of Nevada 1991*,
pages 2642-2643)

Assembly Concurrent Resolution No. 85—Committee on Education

FILE NUMBER..183..

ASSEMBLY CONCURRENT RESOLUTION—Directing the Legislative Commission to conduct an interim study on public elementary and secondary education in this state.

WHEREAS, Public education is a fundamental responsibility of state government; and

WHEREAS, Public education plays a crucial role in producing well-informed, educated and productive members of society; and

WHEREAS, Public education is an important factor in maintaining the excellent quality of life enjoyed by the people of this state; and

WHEREAS, Public education is critically important in the state's plan for economic diversification; now, therefore, be it

RESOLVED BY THE ASSEMBLY OF THE STATE OF NEVADA, THE SENATE CONCURRING, That the Legislative Commission is hereby directed to conduct an interim study on public elementary and secondary education in this state; and be it further

RESOLVED, That the study must emphasize an evaluation of:

1. The effects of allowing parents the right to choose which school their child attends;
2. Alternative teaching methods to that of "tracking" pupils in particular courses of study;
3. The feasibility and desirability of lengthening the school year;
4. Cost-effective ways of reducing the ratio of pupils to teachers in the classroom;
5. Flexible hours for a school day;
6. Any new teaching methods and procedures currently being used successfully in other states;
7. The present and long-term effects of using certain drugs to treat pupils who are hyperactive or inattentive; and
8. The problems of providing alternative housing and educational opportunities for pupils who are suspended or expelled from public schools for the commission of violent acts or the possession of dangerous weapons;

and be it further

RESOLVED, That the committee appointed by the Legislative Commission to study public elementary and secondary education in this state must meet at least seven times during the interim and must consult with such experts in the field of education as the committee deems appropriate to obtain information necessary for the study; and be it further

RESOLVED, That the results of the study and any recommended legislation be reported to the 67th session of the Nevada Legislature.

19 ◆ 91

APPENDIX B

"Class-Size Reduction Statistics 1991-92 School Year"

24-Nov-92 CLASS-SIZE REDUCTION PROGRAM - SCHOOL YEAR 1991-92

KINDERGARTEN	CARSON	CHURCH	CLARK	DOUGLAS	ELKO	HUMBLDT	LANDER	LINCOLN	LYON	MINERAL	NYE	PERSHNG	STOREY	WASHOE	WH PINE	STATEWIDE TOTALS
Enrollment	514	301	10,940	455	725	242	141	63	362	99	318	71	32	3,035	103	17,401
Regular teachers	9.0	6.5	212.8	9.0	17.5	5.5	4.0	3.0	9.0	2.5	10.5	1.5	0.5	61.5	3.2	356.0
Class-size reduction teachers	2.0	1.0	11.0	0.5	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.5	0.5	5.0	0.5	23.5
Total teachers	11.0	7.5	223.8	9.5	18.5	5.5	4.5	3.0	9.5	2.5	11.0	2.0	1.0	66.5	3.7	379.5
Pupil-teacher ratio	23.4	20.1	24.4	23.9	19.6	22.0	15.7	10.5	19.1	19.8	14.5	17.8	16.0	22.8	13.9	22.9
Percent of classes: self-contain	90.0%	86.7%	98.6%	100.0%	94.3%	100.0%	100.0%	100.0%	77.8%	100.0%	100.0%	75.0%	100.0%	90.1%	100.0%	96.1%
team-taught	10.0%	0.0%	0.9%	0.0%	5.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	9.9%	0.0%	2.8%
other plan	0.0%	13.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	22.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
FIRST GRADE																
Enrollment	570	381	11,442	496	733	296	131	66	429	99	270	85	27	3,986	150	19,161
Regular teachers	21.0	15.0	373.5	22.0	28.0	8.0	6.0	4.0	20.0	4.0	12.0	4.0	1.0	170.0	6.4	694.9
Class-size reduction teachers	16.0	9.0	347.5	10.0	21.0	10.0	3.0	1.0	9.0	2.0	7.0	2.0	1.0	92.0	4.0	534.5
Total teachers	37.0	24.0	721.0	32.0	49.0	18.0	9.0	5.0	29.0	6.0	19.0	6.0	2.0	262.0	10.4	1,229.4
Pupil-teacher ratio	15.4	15.9	15.9	15.5	15.0	16.4	14.6	13.2	14.8	16.5	14.2	14.2	13.5	15.2	14.4	15.6
Percent of classes: self-contain	45.8%	40.0%	74.3%	22.2%	31.0%	100.0%	100.0%	100.0%	96.4%	80.0%	100.0%	50.0%	100.0%	51.4%	100.0%	68.7%
team-taught	54.2%	60.0%	22.0%	77.8%	69.0%	0.0%	0.0%	0.0%	3.6%	20.0%	0.0%	50.0%	0.0%	34.8%	0.0%	26.4%
other plan	0.0%	0.0%	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.8%	0.0%	4.9%
SECOND GRADE																
Enrollment	534	294	10,960	460	736	267	147	65	409	84	282	89	28	3,407	127	17,889
Regular teachers	23.0	14.0	472.8	19.0	30.0	13.0	7.0	4.0	16.0	4.0	16.0	4.0	1.0	131.0	7.4	762.2
Class-size reduction teachers	11.0	7.0	178.5	10.0	14.0	4.0	3.0	1.0	9.0	2.0	4.0	2.0	1.0	84.0	2.0	332.5
Total teachers	34.0	21.0	651.3	29.0	44.0	17.0	10.0	5.0	25.0	6.0	20.0	6.0	2.0	215.0	9.4	1,094.7
Pupil-teacher ratio	15.7	14.0	16.8	15.9	16.7	15.7	14.7	13.0	16.4	14.0	14.1	14.8	14.0	15.8	13.5	16.3
Percent of classes: self-contain	21.1%	50.0%	76.6%	47.4%	62.5%	93.8%	100.0%	100.0%	95.8%	80.0%	100.0%	50.0%	100.0%	60.5%	100.0%	72.6%
team-taught	78.9%	50.0%	11.5%	52.6%	37.5%	6.3%	0.0%	0.0%	4.2%	20.0%	0.0%	50.0%	0.0%	25.8%	0.0%	17.3%
other plan	0.0%	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.7%	0.0%	10.1%
TOTALS																
Total Teachers Hired	29.0	17.0	537.0	20.5	36.0	14.0	6.5	2.0	18.5	4.0	11.5	4.5	2.5	181.0	6.5	890.5
Total Teachers Allocated by Dept	29.0	17.0	537.0	20.5	36.0	14.0	6.5	2.0	18.5	4.0	12.5 (1.0)	4.5	2.5	181.0	6.5	891.5

SUMMARY

Class-size Funding approved by Legislature:	$30,256,587 for 934.5 teachers.
Funding allocated by Department of Education:	$30,233,891 for 891.5 teachers.
Actual Expenditures:	$30,040,150 for 890.5 teachers.

Note: Eureka and Esmeralda school districts not included in table: they already met required ratio.

(Data from reports filed with the Department of Education by local school districts.)

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APPENDIX C

"Class-Size Reduction Evaluation Prospectus"

CLASS SIZE REDUCTION EVALUATION PROSPECTUS

The Class Size Reduction Task Force previously agreed to consider various suggestions from members for the purpose of arriving at a consensus on an evaluation design to be used with the class size reduction program.

It is important that agreement on an evaluation design be reached so that a statewide evaluation report, including student achievement data, behavioral data and attitudinal measures can be presented to the 1993 Legislature. Without such accounting, it is very likely that the program will not continue to be funded.

Since the last meeting of the Task Force, a few informal planning meetings have been held with Department personnel and representatives of the Clark and Washoe Districts and the Rural Alliance. As a result of these discussions, we have prepared the following for your consideration.

Objectives of the Class Size Reduction Evaluation

1. To determine the effects of class size reduction on student academic achievement in reading and mathematics.

2. To determine the effects of class size reduction on student behavior (e.g. absences, disciplinary referrals).

3. To determine the effects of class size reduction on teacher attitudes (e.g. job satisfaction) and behavior.

4. To determine the effects of class size reduction on instructional practices in the classroom.

5. To determine the effects of class size reduction on building principals' attitudes and behavior.

6. To determine the effects of class size reduction on parental satisfaction and behavior.

7. To determine to what extent the above effects (# 1-6) are dependent upon selected school characteristics (e.g. socio-economic status, transiency).

8. To determine to what extent the above effects (# 1-6) are dependent upon the class size configuration (e.g. 15:1, 30:2).

9. To begin to determine the long term effects of participation in the class size reduction program. (Each district could develop procedures for tracking a subset of students until they graduate or beyond).

Suggested Data Elements Related to the Objectives

1. Student Achievement Data.

Beginning with the 1990-91 school year, third graders in all districts were required to take the CTBS/4. Therefore the third grade test results for 90-91 and 91-92 can serve as baseline data to be compared with test results beginning in 1992-93 when reduced class size becomes a reality for grade three. At that time results can also be compared for students who have experienced reduced size classes in grades 1,2, and 3 vs. those who have had this experience in grades 2 and 3 vs. those who have only had this experience in grade 3. The weakness of this procedure is that it is usually impossible to know what kind of learning environment students experienced while they were living in other states.

In addition to the third grade, many of the districts administer the CTBS/4 in other grades for which this practice is not mandated (See Attachment A). Particularly pertinent to the evaluation of the Class Size Reduction Program are those who regularly administer these tests in grades 1 and 2.

Eleven districts administer the CTBS/4 in grade 1. In addition, Washoe administered these tests to a sample of first grade classrooms in the spring of 1991.

Fifteen districts administer the CTBS/4 in grade 2. Of these fifteen, most have administered these tests for several years. However, Humboldt began standardized testing for both the first and second grades in 1990-91 and Lander will initiate second grade testing in 1991-92.

Please see Attachment B which provides some idea of baseline test years and the reduced class size test years for each of the primary grades.

It is suggested that a comparison of the third grade CTBS/4 baseline data and the third grade reduced class size CTBS/4 data for all districts be used as one measure of Objective 1. Another useful piece would be to compare baseline and reduced class size test data for the second grade for the 14 districts which regularly test in this grade.

It is further suggested that these comparisons of test score data be confined to reading and mathematics data even though the tests also include items to measure achievement in other areas of the core curriculum, namely, language arts, science and social studies. There are several reasons for this recommendation. One is that not all districts give all parts of the test. However all districts give the reading and mathematics portions. In addition, the CTBS tests were selected for use in the state by district representatives specifically because they more closely fit the reading and mathematics curriculum than do other tests. However, because of the wide variety of topics which may be covered in language arts, science, and social studies, it is very difficult to find any one test which can provide a reasonable measure of what is being taught in these areas.

2. Student Behavioral Data.

a. Number of absences by grade level by school

b. Number of disciplinary referrals by grade level by school

c. Number of retentions by grade level by school

d. Number of learning problem referrals by grade level by school

e. Number of special education placements by grade by school

f. Number of remedial special program placements by grade by school

In selecting the data elements for this objective, it is suggested that it would be useful to identify the available data elements, those which are regularly collected and easily retrievable for baseline purposes.

3. Teacher Attitudes and Behavioral Data.

a. Job satisfaction/perceived problems by grade by school

As you know, attitudinal data was obtained from first grade teachers in the spring of 1991 by means of questionnaires. It is suggested that surveying the teachers involved in class size reduction be continued each year. However, it is important that all districts agree on a core of common data elements, the results of which can be aggregated, analyzed, and compiled into a statewide report. If districts are interested in adding other items, which they will analyze for their own purposes, this would be perfectly acceptable as long as the core items are included and reported to the state.

For second and third grade teachers it will also be possible to do pre and post reduced class size experience questionnaires. For example, early this fall second grade teachers could be asked to complete a brief, one page questionnaire; then in the spring these questions could be asked again along with others.

b. Number of transfers requested by grade level by school

c. Number of absences by grade level by school

d. Number and types of contacts with parents by grade level by school

4. Instructional Practices in the Classroom.

a. Instructional practices before reduced size classes and after reduced size classes can be obtained from teachers by means of questionnaires. This information can be included in the brief questionnaire given to second and third grade teachers before or at the beginning of their experience teaching reduced size classes and can be repeated after a year, two years etc.

5. Principal Attitudes and Behavioral Data.

a. These data would also be collected by means of questionnaires. As principals have already experienced the first grade class size reduction, a before and after measure will not be possible. However it would still be important to ask them how the program is working in their schools, whether there are problems, how the situation changes as second and third grades are added to the program, how the higher grade classes are affected etc. Once again, a common core of questions to be asked in all districts needs to be agreed upon.

b. Number and types of contacts with teachers

c. Teachers could also be asked about contacts with principals, administrative support and other staff support (as a part of # 3a)

6. Parental Satisfaction and Behavioral Data.

a. Parental attitudes can be obtained by surveying random samples of the parents affected by the program (first and second grade parents in 1991-92; first, second, and third grade parents in 1992-93 etc.) These samples need to be carefully drawn and records kept to determine the response rates.

b. Number and types of parent contacts with the school

Parents, teachers, and principals can be asked about any changes in the degree of parent involvement in the school, the classroom, and with their children at home.

7. Achievement, Attitudinal, and Behavioral Effects of Class Size Reduction by Selected School Characteristics.

Previous studies in other states have found that the degree of change due to class size reduction is much greater for some groups of children than for others. Therefore it is suggested that it would worth collecting some of the following types of school descriptive data:

a. Socio-economic status of schools
(suggested measure: percent of free and reduced lunches as a function of school size)*

b. Transiency rate
(suggested measure: add the number of students who enter after the school year starts to the number of students who leave before the school year ends and divide by the year's average daily membership.)*

c. Percent of children from families whose primary language is not English
(suggested measure: ESL enrollment)

d. Chapter I participation

e. Special education enrollment

f. Percent of students bussed

8. Achievement, Attitudinal, and Behavioral Effects of Class Size Reduction by Class Size Configuration (e.g. 15:1; 30:2).

In addition to an overall evaluation of the effects of class size reduction in the state, the measures discussed in #s 1-6 can be analyzed separately by each major type of class size configuration in use. For this analysis, however, it may be necessary to collect the data by classroom unless the same type of class size configuration is used in each school.

* Dan Cline and Steve Rock, REPC, University of Nevada-Reno, "A Draft Prospectus for Conducting a Statewide Evaluation of the Effects of the Nevada Legislature's 1989 Class Size Reduction Initiative", March,1991, pp. 9,10.

9. Long Term Effects of Participation in the Class Size Reduction Program.

For this kind of longitudinal study, involving the tracking of individual students, it will be necessary to project code all children in the class size reduction program. It will also be necessary to draw a random sample of these children which is large enough to take into account the natural attrition that will occur in the cohort. This type of study may not be feasible for every district, but would provide very valuable information for those that do have the resources to carry it out.

Issues To Be Resolved

1. Comparable Instruments for Data Collection

2. Comparable Reporting Formats

3. Quality Control-Coordination and Standardization of the Process of Data Collection and Reporting

4. Units of Analysis

5. The Analysis--How and By Whom?

Standardized tests available in Nevada
Grades K-7
as of July, 1991

This table summarizes large scale assessment programs currently in operation in Nevada public school districts. The programs identified as large scale assessment programs are those which test 100% of the students at grades as indicated.

TABLE 1.

TEST TYPE

	CTBS/4*								TCS								CRT							
Grade	K	1	2	3	4	5	6	7	K	1	2	3	4	5	6	7	K	1	2	3	4	5	6	7
District																								
Carson			2	3	4	5	6	7																
Churchill		1	2	3	4	5	6	7																
Clark				3			6					3			6			1	2	3	4	5	6	
Douglas				3			6											1	2	3	4	5	6	7
Elko		1	2	3	4	5	6	7																
Esmeralda		1	2	3	4	5	6	7																
Eureka	K	1	2	3	4	5	6	7																
Humboldt		1	2	3	4	5	6	7		1		3		5		7								
Lander			2	3	4	5	6	7**																
Lincoln		1	2	3	4	5	6	7																
Lyon			2	3	4		6																	
Mineral		1	2	3	4	5	6	7																
Nye	K	1	2	3	4	5	6	7																
Pershing		1	2	3	4	5	6	7																
Storey		1	2	3	4	5	6	7																
Washoe			2	3	4	5	6	7									K				4	5	6	7
White Pine		1	2	3	4	5	6	7																

N=17

TABLE 2.
FREQUENCY OF DISTRICTS USING CTBS/4

Grade	K	1	2	3	4	5	6	7
Total	2	11	15	17	15	14	17	14
%	12%	65%	88%	100%	88%	82%	100%	82%

Notes:

* These include CTBS/4 math and reading and language tests which are administered at grades 3 and 6 to all students as a requirement of the Nevada Proficiency Examination program.

** To be administered for the first time Fall, 1991.

There are a very few other instruments which are used with much smaller numbers of students. These include, but are not limited to:

- Home School Test, Grades 1-12, 150 students tested annually (Washoe)
- Diagnostic Reading Tests, Grades 2-9, 50% students tested annually (Washoe)
- IAS, Grades 2-12, 4.5% students tested annually (Clark).

FIRST GRADE: Baseline Test Years 1989-90, 1990-91

Reduced Class Size Test Years 1990-91, 1991-92, 1992-93 etc.

SECOND GRADE: Baseline Test Years 1989-90,1990-91

Reduced Class Size Test Years 1991-92, 1992-93

THIRD GRADE: Baseline Test Years 1990-91, 1991-92

Reduced Class Size Test Years 1992-93 etc.

APPENDIX D

"National Goals For Education"

NATIONAL GOALS FOR EDUCATION

Readiness

GOAL

By the Year 2000, All Children in America Will Start School Ready to Learn.

Objectives:

- All disadvantaged and disabled children will have access to high-quality and developmentally appropriate preschool programs that help prepare children for school.

- Every parent in America will be a child's first teacher and devote time each day helping his or her preschool child learn; parents will have access to the training and support they need.

- Children will receive the nutrition and health care needed to arrive at school with healthy minds and bodies, and the number of low-birthweight babies will be significantly reduced through enhanced prenatal health systems.

School Completion

GOAL

By the Year 2000, the High School Graduation Rate Will Increase to at Least 90 Percent.

Objectives:

- The nation must dramatically reduce its dropout rate and 75 percent of those students who do drop out will successfully complete a high school degree or its equivalent.

- The gap in high school graduation rates between American students from minority backgrounds and their non-minority counterparts will be eliminated.

Student Achievement and Citizenship

GOAL

By the Year 2000, American Students Will Leave Grades Four, Eight, and Twelve Having Demonstrated Competency Over Challenging Subject Matter Including English, Mathematics, Science, History, and Geography, and Every School in America Will Ensure That All Students Learn To Use Their Minds Well, So They May Be Prepared for Responsible Citizenship, Further Learning, and Productive Employment in Our Modern Economy.

Objectives:

- The academic performance of elementary and secondary students will increase significantly in every quartile, and the distribution of minority students in each level will more closely reflect the student population as a whole.

- The percentage of students who demonstrate the ability to reason, solve problems, apply knowledge, and write and communicate effectively will increase substantially.

- All students will be involved in activities that promote and demonstrate good citizenship, community service, and personal responsibility.

- The percentage of students who are competent in more than one language will substantially increase.

- All students will be knowledgeable about the diverse cultural heritage of this nation and about the world community.

Mathematics and Science

GOAL

By the Year 2000, U.S. Students Will Be First in the World in Mathematics and Science Achievement.

Objectives:

- Math and science education will be strengthened throughout the system, especially in the early grades.

- The number of teachers with a substantive background in mathematics and science will increase by 50 percent.

- The number of U.S. undergraduate and graduate students, especially women and minorities, who complete degrees in mathematics, science, and engineering will increase significantly.

Adult Literacy and Lifelong Learning

GOAL

By the Year 2000, Every Adult American Will Be Literate and Will Possess the Knowledge and Skills Necessary to Compete in a Global Economy and Exercise the Rights and Responsibilities of Citizenship.

Objectives:

- Every major American business will be involved in strengthening the connection between education and work.

- All workers will have the opportunity to acquire the knowledge and skills, from basic to highly technical, needed to adapt to emerging new technologies, work methods, and markets through public and private educational, vocational, technical, workplace, or other programs.

- The number of quality programs, including those at libraries, that are designed to serve more effectively the needs of the growing number of part-time and mid-career students will increase substantially.

- The proportion of those qualified students, especially minorities, who enter college; who complete at least two years; and who complete their degree programs will increase substantially.

- The proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially.

Safe, Disciplined, and Drug-Free Schools

GOAL

By the Year 2000, Every School in America Will Be Free of Drugs and Violence and Will Offer a Disciplined Environment Conducive to Learning.

Objectives:

- Every school will implement a firm and fair policy on use, possession, and distribution of drugs and alcohol.

- Parents, businesses, and community organizations will work together to ensure that schools are a safe haven for all children.

- Every school district will develop a comprehensive K-12 drug and alcohol prevention education program. Drug and alcohol curriculum should be taught as an integral part of health education. In addition, community-based teams should be organized to provide students and teachers with needed support.

① ACTION AGENDA FOR STATES

While the education goals are national, primary responsibility for achieving them lies at the state level. Education has been and remains a state responsibility and a local function. State constitutions establish our public education system, and states have the authority to govern them. States provide about half the resources for elementary and secondary education, with most of the rest provided by local governments operating under state authority. States have been leading education reform for more than a decade and have the resolve and commitment to provide leadership for the future.

The goals are interrelated. Reaching any one goal (such as adult literacy) ultimately depends upon success in reaching others (preschool, school achievement). Similarly, all parts of the education system are inextricably intertwined, so that one part of the system cannot be changed without changing the others. For example, the number of women and minorities earning advanced degrees in mathematics and science will not be increased without radical changes in the elementary school curriculum. Classroom teaching will not change substantially without changes in the higher education system that prepares teachers. Restructuring schools will not ensure the success of at-risk children unless their health and social needs are addressed as well.

Consequently, our strategies must focus on making the necessary changes in a number of systems that contribute to achieving the goals. These strategies entail higher expectations for performance at all levels; they also require the following:

- Greater and more effective investments in early intervention and prevention to ensure that children arrive at school ready to learn.

- Fundamental restructuring of the elementary and secondary education system, to provide accountability for results, flexibility in the means of achieving them, and enhanced incentives and capacities for schools and educators.

- Creation of a comprehensive system that can respond to the needs of adults and employers, provide training, and support lifelong learning.

Governors have already begun. States have been working to bring about many of these changes for some time. What is required now is renewed commitment and coordinated effort to accomplish the task ahead.

The Preschool Years

GOAL

By the Year 2000, All Children in America Will Start School Ready to Learn.

The 1980s have been an era of growth, diversification, and refinement for early childhood services. Business and state political leaders have seized on the promise of investing in preventive services for young children and families. Dozens of states have developed innovative programs to provide child care and preschool education, parent education and support, and health care for infants and mothers. We have learned what it takes to make a positive, permanent difference in the lives of young children. The most essential elements are responsible parents and a healthy, nurturing home life. Unfortunately, these elements are absent for many children and often must be supplemented by services and programs. However, many programs are still in their infancy and there is a growing crisis in the equity, quality, and affordability of early childhood services.

- In 1987, almost one-quarter of all infants were born to women who did not receive prenatal care in the first three months of pregnancy.

- Fewer than one-third of children of parents earning less than $10,000 per year were enrolled in a preschool program in 1985, compared with a two-thirds participation rate for families earning more than $35,000 annually.

- Child care staff turnover has tripled in the last decade; the average annual turnover rate in 1988 was 40 percent.

> ***"Parents, after all, are a child's first and most effective teachers, and should consider themselves full partners in the school system."***
>
> • Governor Cecil D. Andrus
> *Idaho*

- Although many parents need full-day programs due to their work schedules, Head Start and most new state early childhood education programs serve children for only three hours per day. Young children need teaching and other experiences that prepare them for school and that also meet the child care needs of families.

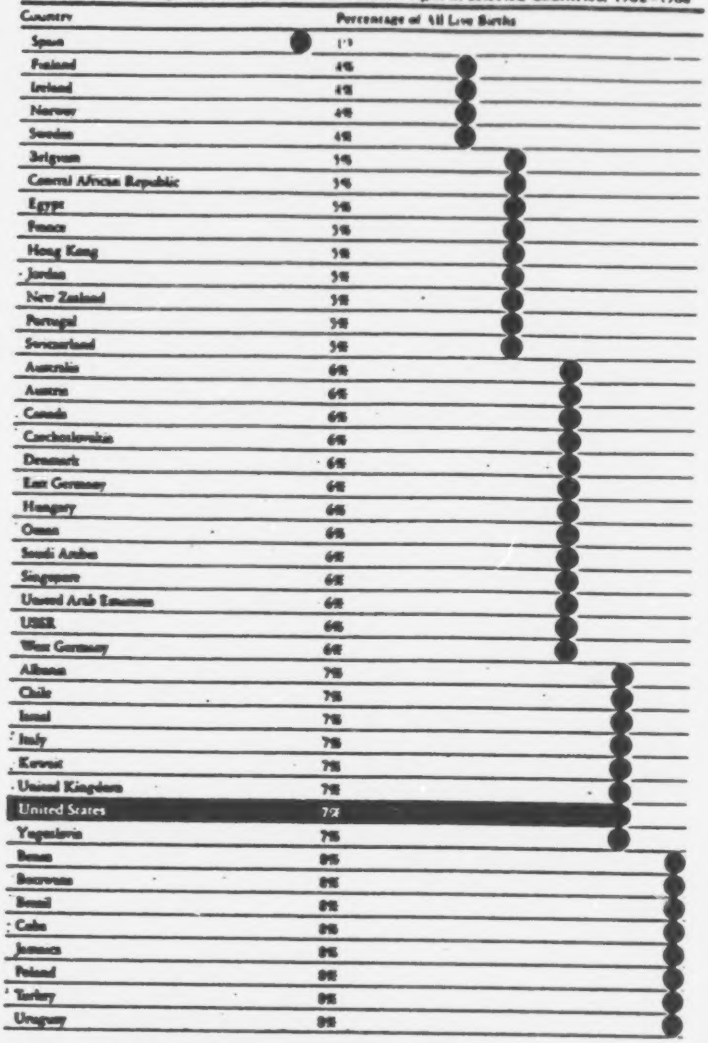
Attaining universal school readiness also depends upon improving the capacities of public schools to accommodate the diverse learning styles and capacities of young children. There are indications that many schools are not sufficiently "ready" to provide successful experiences for their youngest students. Some states have raised the age of entry for kindergarten—indicating higher expectations for children before they start school. Reports of substantial rates of retention of kindergarten students and programs that offer an extra year before first grade also indicate a mismatch between what schools expect and what they are able to engender in terms of children's performance.

Thus, policies to promote school readiness must meet competing, often conflicting needs. Maternal and child health, parent education and support, and preschool and child care services must be expanded while still safeguarding and improving quality. Parental responsibility and involvement must be strengthened. The diversity of today's families and the important relationships between parents and children must be respected. Access to and the quality of child care and preschool education must be increased without raising costs excessively or reducing parents' rights to choose the type of setting and program for their children. The unmet needs of those children most at risk of school failure must be addressed, without fostering programs that are segregated by race or family income.

States should consider the following strategies:

STRATEGY: Give every baby a healthy start in life and every child a healthy start in school. Healthy children have more energy and the capacity to respond to teaching and school activities. Cost-effective health services can be implemented even before children are born by providing prenatal care and support to expectant mothers. If health problems and special needs in young children can be identified and remedied, their readiness for school success will be enhanced. States should:

Figure 1 Percentage of Infants Born at Low Birthweight in Selected Countries, 1982-1988



Source: Children's Defense Fund, *S.O.S. America!: A Children's Defense Budget* (Washington, D.C.: Children's Defense Fund, 1990), p. 141.

- **Improve and expand access to prenatal and well-child care.** Prenatal care can reduce the incidence of low-birthweight babies and the risk of damage to infants due to exposure to drugs. Health care and good nutrition during the early childhood years can reduce the incidence of learning disabilities and costly health problems.

States should make public health services more accessible by shortening Medicaid application forms, enrolling parents and children at hospitals and clinics, and allowing women to receive prenatal care under short-term presumptive Medicaid eligibility. The delivery of services should be improved, and poor parents should be offered enriched prenatal care, including risk assessment, health education, nutritional information, counseling, and home visits. Programs should be developed to provide enriched prenatal and well-baby support services outside the traditional system.

- **Ensure that all young children receive comprehensive health screening and services.** Work with parents, schools, preschools, and child care providers to give children comprehensive screening for auditory, visual, dental, physical, and developmental problems. Help parents obtain additional diagnostic and treatment services.

- **Develop collaborative strategies to fund and deliver services.** The support and services required to help parents and young children cut across many jurisdictional boundaries—across state agencies, across federal, state, and local programs, and between public and private sectors. States should convene representatives of public health, education, and social service agencies to develop joint initiatives to reduce dangerous health habits in expectant mothers and to promote prenatal care. Institutions of higher education, including schools of medicine, nursing, and social work, should be involved as partners. States should encourage public assistance and health care providers to facilitate access to programs and help public schools use Medicaid/Early and Periodic Screening, Diagnosis and Treatment (EPSDT) resources for screening and health services.

STRATEGY: Equip parents to support their child's development and learning. Parents are the first and most powerful teachers of their children. If parents are informed and confident in supporting their child's early learning and development, they can powerfully enhance school readiness. Parents who are active in early childhood education also are prepared to participate in their child's elementary school education. States should:

- **Offer quality support and education services to parents.** Expand parent education courses and home visit programs that teach new parents how to create a healthy home environment for their child. Develop networks for parents to help each other with common problems. Link parents with services they may need such as health care, child care, adult literacy programs, counseling, employment services, and substance abuse treatment. Create alternative strategies and different levels of resources to recruit parents with more serious problems and meet their needs.

"Ultimately, more support for Head Start and early childhood education will do more to ease prison overcrowding than any program my commissioner of corrections could undertake."

- Governor John R. McKernan Jr.
  Maine

STRATEGY: Give every child high-quality, developmental early education and care services in a setting of the parents' choice. For many parents, staying at home with their children is the best choice. While parent education and support programs strengthen home environments for children, today's families increasingly rely on formal and informal child care and preschool programs to help prepare their children for school. High-quality programs have long-term benefits for children and society; unsafe and unstimulating settings can damage children's readiness to learn. Thus, states should:

- **Increase access to affordable, high-quality services.** Make sure all disadvantaged and disabled children have access to high-quality and developmentally appropriate preschool programs. Continue to expand programs that respond to the needs of families and that implement effective services. Work with federal, state, and local agencies to provide more support for programs with low staff-child ratios, strong parent involvement, developmentally appropriate curriculum, and provision of health care and social services. Encourage communities to assess parental needs and preferences and the capacity and quality of existing programs as a basis for setting priorities for expansion. Offer communities flexible funding that responds to parental needs and preferences.

- **Improve quality in all types of early care and education.** Strengthen the capacity of early childhood programs and providers to do a good job with the children they are now serving. Help providers improve by offering increased funding and higher reimbursement rates, and access to child nutrition programs, health care, and parent education services. Support training for staff from all types of preschool and child care programs, including family day care.

- **Provide better information to parents about available programs.** Develop a network of resource and referral programs to help parents find child care. Develop detailed community directories of existing programs. Provide information on child care options through pediatricians, schools, libraries, churches, and neighborhood organizations that are in contact with parents.

- **Support a quality workforce for early childhood programs.** Develop strategies to attract, prepare, and retain talented and dedicated staff in all types of early childhood services. Develop a training and career development system for early childhood workers including scholarships, loan forgiveness plans, flexible certification and licensure systems, and investments in ongoing professional development. Develop strategies to improve compensation and reduce staff turnover rates.

STRATEGY: Build connections among early childhood services. A variety of early childhood programs offers options to parents and greater responsiveness to the needs of children. However, if services are fragmented and disconnected, it is more difficult for parents to provide for the full needs of their children. State government is the key agent to lead efforts to provide more accessible, comprehensive, and continuous programs for children and families through the following strategies:

- **Coordinate funding, planning, and standards for related federal and state programs.** Develop plans to work with Head Start program expansions, possible new federal child care funding, and programs for preschool children with special needs. Work with federal agencies to coordinate funding and program extensions, and combine resources for staff development and recruitment of families.

- **Initiate local models of collaborative, continuous services.** Help bring together services for young children and their parents. Family service centers can offer an array of programs in a single facility. Health programs for expectant mothers also can link them to child care and parent education services. Parent education centers can refer families to health care, child care, adult literacy, and substance abuse programs. Head Start and preschool programs should expand their ability to provide child care for parents who work or who participate in training required under the Family Support Act.

- **Support private sector early childhood initiatives.** Help employers meet the child care needs of employees through means such as tax incentives, and stimulate private sector contributions to early childhood programs in their communities. Parent education programs can deliver services to parents where they work, and employers can encourage employees to be involved in their children's education and in their local schools.

- **Educate and involve the public in school readiness efforts.** Promote broader public awareness of the importance of the early childhood years. Motivate parents and other community members to lend a hand in enhancing school readiness. Encourage grandparents, neighbors, siblings, and volunteers to help by playing, talking, and reading with young children. Develop intergenerational programs for senior citizens and preschool children through churches, civic programs, and community centers.

Finally, in order to realize the benefits of investing in quality programs for young children and their parents, public schools must become more prepared for their youngest students.

"Making sure that children are prepared for entering school and that schools are prepared for them must be a national concern."

- Governor Guy Hunt
  Alabama

Schools must do more to support kindergarten and primary grade children with age-appropriate expectations and activities. As public schools are restructured there are three crucial elements to emphasize in the early elementary grades:

- **Welcome parents as equal partners in children's learning and schooling.** Build on strong parent education support and involvement begun in quality early childhood programs. Make special efforts to encourage parents from programs like Head Start to transfer their advocacy and involvement to the public schools. Sponsor education and support services for parents of school-age children and help them locate the health care, child care, and social services they need.

- **Improve student assessment and school entry policies.** Develop assessment systems for young children that reflect the ultimate goals of producing independent, creative, and critical thinkers. Train teachers to observe and assess children's work in different content areas, using methods such as portfolio systems, observational checklists, and cumulative sampling of children's work. Develop models to use teacher assessments of student proficiencies for reporting to parents and the public. Eliminate the use of screening or readiness tests that are inaccurate or unreliable.

- **Improve responsiveness to the varied learning styles and diversity of young learners.** Age grading and fixed school years limit the capacity of schools to respond to the varied development levels and learning needs of young children. Consequently, when faced with youngsters who are not making adequate progress, schools are often forced to rely on retention or "extra-year" programs in the primary grades. Yet this approach can stigmatize young children and force them to repeat or delay an entire year, when less extreme measures may be all that is required. Students who lag behind their age mates by a year are especially at risk of dropping out later. States should consider alternative approaches—such as ungraded early primary programs, multi-age grouping, or summer programs—that provide more flexible time, to allow children to progress at their own rate and still meet performance standards.

The School Years

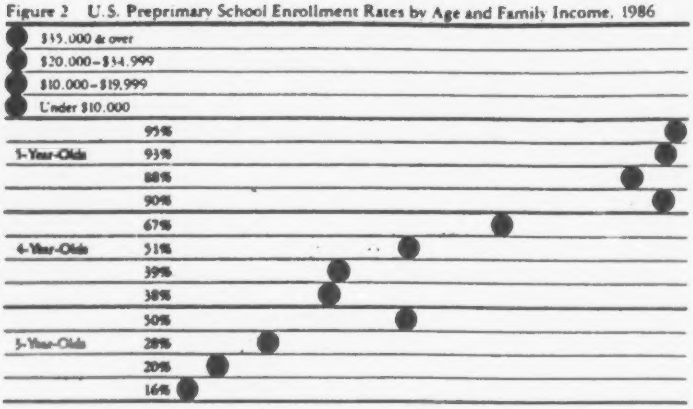
GOAL

By the Year 2000, the High School Graduation Rate Will Increase to at Least 90 Percent.

GOAL

By the Year 2000, American Students Will Leave Grades Four, Eight, and Twelve Having Demonstrated Competency Over Challenging Subject Matter Including English, Mathematics, Science, History, and Geography, and Every School in America Will Ensure That All Students Learn to Use Their Minds Well, So They May Be Prepared for Responsible Citizenship, Further Learning, and Productive Employment in Our Modern Economy.

Figure 2 U.S. Preprimary School Enrollment Rates by Age and Family Income, 1986



Source: National Center for Children in Poverty, *Five Million Children: A Statistical Profile of Our Poorest Children* (New York: Columbia University Press, 1990), p. 73.

GOAL

By the Year 2000, Every School in America Will Be Free of Drugs and Violence and Will Offer a Disciplined Environment Conducive to Learning.

Schools are failing our children. Day after day, students are taught in ways that doom many of them to fall further and further behind and most to achieve far less than they can. With the exception of a small percentage of students who go to selective colleges and universities, the vast majority of students have few incentives to excel in school. Those who are not college-bound are particularly shortchanged. But

Figure 3 Writing Ability of U.S. 11th-Graders, 1988

Percentage of Students At Each Level

●	Elaborated	4.1%
●	Adequate	64.4%
●	Minimal	17.5%
●	Unsatisfactory	12.8%
●	Not Rated	1.3%

Note: Test requires students to provide a brief description of a desirable summer job and to summarize their previous experiences or qualifications for it.

Definitions of Accomplishment Levels: Elaborated—Students went beyond the essential, reflecting a higher level of coherence and providing more detail to support the points made. Adequate—Students included the information and ideas necessary to accomplish the underlying task and were considered likely to be effective in achieving the desired purpose. Minimal—Students recognized some or all of the elements needed to complete the task but did not manage these elements well enough to assure that the purpose of the task would be achieved. Unsatisfactory—Students provided very abbreviated, circular, or disjointed responses that did not even begin to address the writing task. Not Rated—A small percentage of the responses were blank, indecipherable, or completely off task, or contained a statement to the effect that the student did not know how to do the task; these responses were not rated.

Source: National Assessment of Educational Progress, *The Writing Report Card, 1984-88* (Washington, D.C.: Office of Educational Research and Development, 1990), pp. 7, 13.

achievement is inadequate across the board; the performance of both the highest and the lowest achievers must improve.

Unfortunately, the most basic features of the elementary and secondary education system have remained unchanged throughout this century, despite marked changes throughout our society. Schools still run on an agrarian calendar even though we now live in an information society. And many students lose academic ground over the summer months—and cannot catch up even when placed in special programs.

Students are assigned to schools based on where they live. Schools are age-graded, and students are further grouped and sorted by ability. The school curriculum and textbooks are fragmented and repetitive. They focus largely on the mastery of discrete, low-level skills and isolated facts, and deny opportunities for students to master subject matter in depth, learn more complex problemsolving skills, or apply the skills they do learn. Instruction is labor-intensive, conducted in large groups, and standardized for everyone in the group. Progress through the system is a function of time. Students move with their age mates unless their performance is completely unsatisfactory, in which case they are required to repeat an entire year. This arrangement was designed to prepare a workforce destined for the assembly lines of the industrial age. Factories have long since abandoned this approach in favor of more flexible and productive methods, yet our schools have remained unchanged.

Governance, administrative, and funding mechanisms, as well as professional preparation, keep these features in place. Bureaucracy and regulation stifle change. Consequently, the overall performance of the education system has been remarkably constant, and far below what is required for the future. The system

> ***"No one in the public or private sector should be excused from getting involved with schools."***
>
> - Governor William Donald Schaefer
>   *Maryland*

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provides virtually no incentives but many disincentives—such as lack of flexibility, authority, and access to knowledge—for improved performance. For most teachers, principals, superintendents, and local school boards there are no real rewards for good performance, nor are there adverse consequences for poor performance.

Radical changes are required. The education system must be fundamentally restructured. In order to achieve the required changes in schools, equally fundamental changes also will be required in state and local education agencies. In recent years, a number of states have initiated pilot or demonstration programs. These efforts have helped create momentum to dramatically improve the education system, provide a vision and concrete examples of needed improvements, and identify issues that require attention at the school, district, and state levels. However, establishing a restructuring pilot program in and of itself is not a strategy for restructuring the education system. Pilot programs are too small and too slow, even if expanded to include additional sites each year. They are not powerful enough to bring about necessary changes throughout the system.

State policies cannot mandate the necessary reforms from the top. But fundamentally altering the policy environment in which all schools operate can provide the incentives and build the capacity for dramatic improvement at the bottom.

The following broad strategies provide building blocks for state and local policymakers, educators, and community members to invent the schools our children need now and into the next century. They are interdependent; no single strategy will make an enormous impact. They are all required for lasting departures from current practice.

STRATEGY: Set high expectations for student performance. Restructuring efforts must rest on a bedrock belief that all students can learn at high levels. Students with special needs, or from poor and minority backgrounds, have long suffered from the unambitious expectations set for them. Performance expectations for all students have been too low for too long. This is reflected in an unchallenging curriculum and in testing programs that highlight a narrow range of mostly low-level skills. Progress through school has more to do with accumulating seat time and course credits than with demonstrating required competencies. States should:

- **Determine what students need to know and be able to do.** The learning outcomes required for all students, regardless of their destinations after high school, must focus on thinking, reasoning, problemsolving, and integration of knowledge. Students need to be able to apply what they learn in creative and imaginative ways, in novel contexts, and in collaboration with others. Learning outcomes should reflect the skills, knowledge, and attitudes students need to prepare them for employment, further education, and responsible citizenship. Given rapid changes in the workplace, the outcomes expected for students should be reviewed on a regular basis, and revised as necessary.

- **Make the development of new assessment tools a top priority.** New forms of student assessment are needed that require students to synthesize, integrate, and apply knowledge and data to complex problems. These should present tasks for which no one answer is right, but for which a range of solutions may be possible. States should rely more heavily on essays, open-ended problems, portfolios, or other demonstrations of competence and accomplishment. These forms of assessment encourage active teaching and learning so that time allocated to the "test" is not time away from learning. The research and development required to move forward on new assessments will be costly but worth the investment. Collaboration with other states can help reduce each state's share of the costs.

- **Challenge educators to eliminate ability grouping and tracking.** Schools must challenge all students to meet high standards. Yet ability grouping in the elementary grades and tracking in the secondary grades prevent this, especially for students placed in the lower groups. There, low expectations become self-fulfilling prophecies and limit students' access to challenging material or instruction. Once placed in lower tracks, few students ever move up.

By high school, the consequences of tracking are particularly devastating for students in the general track, who find themselves unprepared for either work or postsecondary education. For all students, artificial barriers between academic and vocational curriculum and

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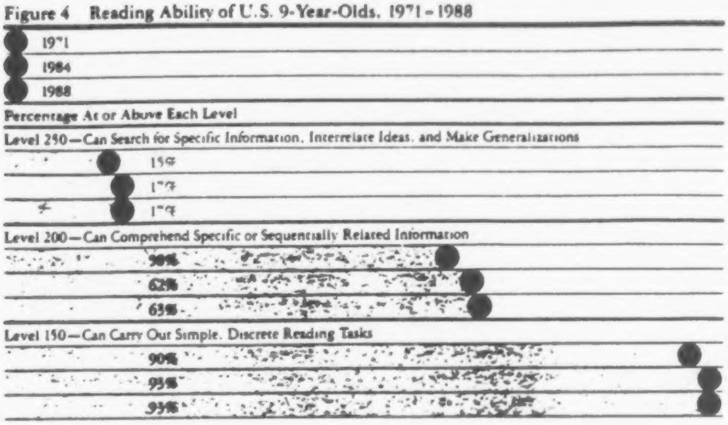
Figure 4 Reading Ability of U.S. 9-Year-Olds, 1971–1988



Source: Educational Testing Service, *Information for National Performance Goals for Education: A Workbook* (Princeton, N.J.: Educational Testing Service, 1989), p. 17.

between theoretical and applied learning must be removed.

Eliminating these practices does not require ending special opportunities for students, such as gifted and talented or Advanced Placement courses. Nor does it mean abandoning special education or remedial programs for those who need additional services or assistance.

However, assignment to these or other instructional opportunities should not permanently label individuals, or place enduring limits on their access to learning opportunities.

And educators should be encouraged and assisted to develop new or use available instructional practices—such as peer tutoring, cooperative learning, or reciprocal teaching—that capitalize on the diversity of students' talents, rather than segregating by ability levels.

- **Strengthen school curriculum.** All students need a rigorous and challenging curriculum that teaches thinking, problem-solving, and the application of knowledge. However, decisions about how, where, and when teaching and learning best take place should be made largely at the school level. To some extent, state assessment policies will shape school curriculum. States need to strike a balance between well-designed state performance measures that shape local practice and the flexibility school staffs need to design approaches that best meet their students' needs. While states will have to determine the proper balance, they should avoid approaches that excessively limit teachers' discretion.

Reducing a teacher's dependence on textbooks as the major source of curriculum content is critical. States should encourage the use of diverse instructional materials, including original sources, literature, and technology. States can promote improvements in the local curriculum by linking schools to national curriculum reform efforts such as Project 2061 in science or the new standards for mathematics developed by the National Council of Teachers of Mathematics; by developing broad frameworks that reflect the best thinking in the field about the knowledge and skills that should be emphasized in various subject areas; and by supporting community- and workplace-based learning options.

- **Challenge parents to assume more responsibility for their child's learning.** Remind parents that their role as their child's first teacher continues throughout the school years. Parents must respect and reinforce the "job" their child has—working hard to learn challenging subject matter and difficult concepts. At school and at home, students will have to work much harder than most adults did when they were in school. Parents are the schools' most critical partners in holding high expectations for children, regardless of their ethnic background, income level, or gender.

STRATEGY: Hold schools accountable for each student's learning. Too often the fundamental question asked of educators is "Did you do what you were told?" rather than "Did you get the results we need?" This focus on rules and enforcement rather than on the achievement of measurable outcomes reinforces the status quo. Few incentives drive schools to change current practices, take risks, or invent new solutions. States should:

- **Design incentives for improvement, including rewards and sanctions linked to school performance.** The purpose in developing a system of rewards and sanctions is not to pick winners and losers, but to create powerful incentives for improvement. A wide range of incentives is needed, including but not limited to recognition, financial rewards, and opportunities for professional development. Incentives must be designed to reward improvement for all schools, and to improve the full range of student achievement, not just average performance. While there is general agreement that the school is the appropriate unit of accountability, states must focus on school districts as well. This means providing incentives for districts to decentralize school management and governance and for central offices to shift their role toward assisting schools.

Consequences for poor performance require a number of intervention strategies, ranging from the provision of assistance and support for needed changes at the district and school level to state takeover of local management and governance if changes are not made and performance does not improve. Consequences must underscore each educator's personal stake in success.

- **Determine interim strategies for school accountability until new assessment tools are developed.** New assessment tools will not be available for several years, but holding schools accountable for student outcomes cannot wait. Interim options for assessing school performance include continued use of the current state assessment program; adoption of interim assessments equated to the test instruments used by the National Assessment of Educational Progress (NAEP); or a requirement that schools develop and report their own accountability systems using outcome measures determined locally. Each option is less than ideal: The first sends the wrong message about the kind of outcomes that are needed, the second requires a substantial investment for a temporary solution, and the third does not permit comparisons of schools across the state. States will have to weigh the pros and cons of different approaches.

- **Shift the role of the state department of education to assistance and, when needed, to intervention.** As accountability systems shift emphasis from compliance to performance, state education agencies must continue to change their focus from merely monitoring compliance to providing leadership and assistance. This change will require determination and enormous effort, for it will alter the roles of an entrenched bureaucracy. The task is not to reorganize but to design and build a responsive state education agency for an outcome-based system.

States need to strengthen activities currently underway to develop indicator and policy information systems and to report performance results to the public. School restructuring requires practical, sustained assistance, which has been difficult for states to provide to even a limited number of pilot schools, let alone to all schools in the state. New models for delivering services should be explored, with state agency staff brokering and coordinating assistance to schools rather than providing it directly. Perhaps the greatest challenge for states is to develop appropriate forms of direct assistance and intervention to improve performance in failing schools.

STRATEGY: Decentralize authority and give school staffs the tools and flexibility they need. Authority and accountability must be placed at the same level of the system. If educators are to be accountable for performance, they must have the authority and discretion to determine how best to achieve desired outcomes. However, the capacity of school staffs to take advantage of decentralized authority and flexibility depends on a few essential tools—assistance, time, technology, and funding. States should:

- **Create incentives for districts to decentralize school management and governance.** Authority over staffing, curriculum, instructional organization, and budget must be placed at the school level. Individual schools should develop their own structures for site management and shared decisionmaking that include administrators, teachers, and parents.

- **Review the entire regulatory system.** State boards of education and state education agencies, in consultation with educators, need to conduct a comprehensive review of all

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"We need to provide incentives—not mandates like we've always done. Bring in the key players and let them take responsibility for success."

- Governor Garrey E. Carruthers
  New Mexico

education rules and regulations (excluding those governing health, safety, and civil rights). No regulation should be retained unless it is consistent with an outcome-based system: the task is to remove barriers to improvement, not to make marginal improvements in the regulations or to provide waivers on a case-by-case basis. Although states may consider waivers as an interim strategy until the outcome-based system is fully implemented, waivers do not provide needed flexibility. Flexibility from district and union rules and regulations also must be addressed. The entire system must focus on children first, not the adults employed by the system.

- **Provide the assistance district and school staff need to change what they do.** Access to knowledge and assistance is a prerequisite if educators are to use their new authority and flexibility to make more than minor adjustments in conventional practices. Educators need information about and help with specific instructional strategies and organizational arrangements, group decisionmaking skills, and other competencies needed to take on new roles. States must find ways to equip educators with visions of alternatives to current practice. Essential steps include shifting the role of the state department of education and making professional development a vital part of each educator's job.

States should consider targeting assistance for improved curriculum and instruction to schools with high concentrations of poor children. While the strategies for restructuring the system are designed to improve outcomes for all learners, schools serving large numbers of at-risk students need immediate assistance to reverse the widespread emphasis on low-level content and drill and practice in basic skills.

- **Give educators time.** Time is a critical and scarce resource for educators involved in restructuring schools. They need time to assume new roles and responsibilities that require increased planning, decisionmaking, professional development, and collaboration. They also need time to show results; pressure to demonstrate immediate improvement is likely to stifle thoughtful change. States must acknowledge that restructuring places extra demands on the time of school staff and that it takes time for results to be visible.

- **Promote the use of emerging technologies.** Computers, VCRs, laser discs, and telecommunications systems, especially when linked together, can transform the way students are taught. Yet technology's potential to make dramatic improvements in learning, teaching, and management remains largely untapped, due to lack of access, vision, and training. Teachers and administrators need to see, experience, and use various computer and telecommunications technologies. And they need access to information on everything from top-quality software to the appropriate use of equipment. As states revamp approaches to staff development, technology should be an integral component, as both a subject and a means of delivery. Specialized training vehicles must be created, such as intensive institutes or cadres of expert teachers available to train others.

Telecommunications projects, which provide one key to improving educational opportunities for many students, particularly those who are disadvantaged or who live in rural areas, must be used more extensively. Incentives also are needed to stimulate more productive uses of technology. These might include matching funds for schools or districts that form consortiums to buy equipment or services, grants that link the use of technology to improved outcomes, or tax breaks to vendors for specific instructional purposes.

- **Rethink school finance policies, especially in light of the shift of accountability and authority to the school level.** Wide disparities in per-pupil expenditures continue to exist. There are districts that simply lack adequate resources. It will be difficult, if not impossible, for schools to enable all students to reach high-level outcomes if they lack the financial resources to provide science laboratory equipment, qualified mathematics teachers, computers, or other critical instructional resources.

State funds now flow to districts, but mechanisms may be needed to direct funds to individual buildings to promote site-based management and restructuring. These mechanisms must provide schools with discretion in how resources are used; highly specified budget categories should be avoided.

States must reexamine the incentive structures built into school finance formulas, which often reward mediocrity and ignore productivity. For example, funding on the basis of student enrollment provides no incentives to increase attendance; funding teacher salaries on the basis of education and experience rewards teachers for characteristics barely related to student achievement. And while there is general agreement that it costs more to educate some students than others, there is a tendency to misclassify students as learning-disabled in order to get a larger share of state and federal funds. Incentive funding strategies, beginning with the finance formula, must be better connected with overall efforts to restructure the education system.

STRATEGY: Overhaul instruction and leadership. First-rate educators are critical to the success of each state's effort to improve student outcomes. Educators must assume new and more complex roles. Few have adequate preparation for the challenge they face; they have never been expected to help all students achieve at high levels, and very few have experienced the diversity of instructional approaches or organizational arrangements that can lead to success. States should:

- **Expand efforts to attract and retain first-rate teachers.** States can build on numerous initiatives now underway to recruit top candidates, recognize outstanding teachers, and improve working conditions and the career structure of teaching. Competitive entry-level and career salaries that include performance incentives continue to be critical. Differentiated pay is essential if schools are to compete for talented individuals in shortage areas, particularly mathematics and science. Alternative routes to licensure provide a vehicle to attract professionals from other fields.

Substantially increasing the number of minority teachers will require strong state leadership and a wide range of strategies such as targeting middle-school minority youngsters to encourage their interest in teaching, providing scholarships or forgivable loans to prospective teachers, and providing incentives to institutions of higher education to recruit, prepare, and graduate prospective minority teachers. States should encourage local school districts and institutions of higher education to develop programs to prepare paraprofessionals, especially minorities, for full teaching careers. States also should consider alternative routes to licensure to more immediately attract minority professionals into teaching.

State efforts to decentralize authority and provide flexibility and autonomy to schools and their staffs are critical to making teaching more attractive. So is the provision of ongoing opportunities to develop knowledge and skills, including sabbaticals and summer institutes. States and local schools must continue to develop new leadership roles and opportunities for advancement within the profession. States should encourage experienced teachers to become certified by the National Board for Professional Teaching Standards when board assessments are first offered in 1993.

Targeted incentives are needed to attract outstanding teachers to schools that serve poor children. Students with the most serious education problems often are assigned the teachers with the least experience and training. Working conditions and salaries are critical problems, but new incentives, such as establishing professional development schools in sites that serve poor children, should be promoted.

- **Develop an outcome-based system for preparation and licensure that is linked to the skills and knowledge needed for new roles in schools.** In addition to a solid liberal arts grounding with an academic major, teachers must demonstrate that they can pass truly demanding performance examinations in all areas in which they teach. They also should demonstrate that they have a solid grasp of different approaches for teaching students from diverse backgrounds or with different learning styles, and that they are prepared to begin to

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"We should help every child — whether that child is talented and gifted, or in special education, or average like most of us — reach as high as his dreams and skills can take him."

- Governor Ray Mabus
  Mississippi

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participate in decisionmaking at the school level. An outcome-based system for preparation and licensure should include:

- New forms of performance assessment for licensure.

- Accountability for colleges and universities, not just education departments, for pass rates on licensure examinations.

- Alternative routes to licensure, in which the same outcome standards for all candidates are maintained whether they participate in a traditional or alternative route.

- Incentives for minority students to enter and complete preparation programs.

- Elimination of emergency licenses but flexibility for schools to use nonlicensed personnel in a variety of roles with students (e.g., mentors, tutors, seminar teachers).

The inadequacy of programs to prepare principals and school superintendents is widely acknowledged; current programs offer administrators little grounding either in cognition and learning or in modern principles of leadership and management. Working with education, business, and community leaders, states must design a system for licensure based on what school administrators will need in order to lead, manage, and succeed in a restructured education system.

- **Stimulate new approaches to teacher preparation.** To assist institutions in developing programs that prepare teacher candidates for licensure, states can provide incentives for arts and sciences faculty, education faculty, and teachers and other school leaders to work collaboratively in redesigning teacher preparation programs. States also can encourage universities to move teacher preparation to the graduate level. The clinical training component of preparation needs immediate attention. It is the aspect of preparation that prospective teachers find most useful, yet it is often shortchanged and given low priority by both higher education and the public schools. Newly emerging concepts such as professional development schools — ideas that merge the theory and practice in teacher preparation and link preparation more closely with school restructuring — must be encouraged.

"The importance of our efforts to restructure our schools and teacher education cannot be overemphasized. New schools of tomorrow will require new teachers of tomorrow."

- Governor Booth Gardner
  Washington

- **Make professional development a vital part of the job.** Changing what is taught and how it is taught requires forms of staff development dramatically different from today's typical pattern of one-shot in-service sessions or courses taken to earn salary increments. Flexibility at the local level should enable educators to schedule regular blocks of time for teachers and administrators to work collegially on common problems. States should identify outstanding educators and use them to provide assistance in schools, particularly those that are failing to make adequate progress on performance.

Professional development schools provide a way to link teacher preparation, support for beginning teachers, and continuing renewal of teachers' and administrators' knowledge and skills. States also should consider developing training institutes where teachers, administrators, and teacher educators learn state-of-the-art findings in their fields, in cognitive science, in technology, and in other areas. Telecommunications offers a vehicle for teachers and administrators to view expert practice and to discuss problems and solutions with thoughtful practitioners and researchers.

Professional development and training for principals and other school leaders must focus on leadership to improve learner outcomes. New provisions for accountability and flexibility and new professional roles in restructured schools will require school site leaders who possess different types of skills and knowledge, such as the ability to manage change and to lead teachers who make critical decisions collaboratively, rather than simply implement decisions made elsewhere. Strengthening district leadership, particularly the superintendent, is critical for providing the vision and capacity needed for restructuring at the local level.

STRATEGY: Expand the range of choices and options for parents and students. A growing number of states already are implementing interdistrict choice and post-secondary enrollment options. A small but growing number of districts are experimenting with different intradistrict choice plans such as open enrollment, magnet schools, and schools-within-schools. However, most poor students and parents still have only one choice. And choice is meaningless unless all schools are excellent in different ways. Even where choices exist, they do not reflect the diverse alternatives and options needed to ensure student success. As states consider means of expanding choice, they must continue to ensure that such approaches neither conflict with court-ordered desegregation efforts, nor can otherwise be used to resegregate schools. States should:

- **Enable new providers to create schools.** States may want to consider enabling public providers other than school districts to operate schools within a school district's boundaries. This step would require changes in state laws that now give districts the sole authority for operating schools at the local level. The change would encourage other providers, such as groups of teachers and administrators, to assume responsibility for running schools and permit parents and students to choose among competing providers.

- **Give students more options regarding when, where, and how they learn.** Alternatives must be expanded for reaching youth who, though in school, are not achieving and for retrieving those who already have dropped out. A wide variety of strategies must be used to enhance students' self-esteem through counseling and other support services, to accommodate diverse learning styles, and to provide open-entry/open-exit learning. Year-round educational opportunities and other ways of organizing the school year are needed. School and work must be linked more directly, with expanded options for apprenticeships, cooperative education, and community service opportunities.

States should encourage new options for high school that first enable students to demonstrate their mastery of core competencies and then offer them the opportunity to choose specialized educational programs such as college preparation, professional or technical education, or education in the fine or performing arts. Employers are increasingly dissatisfied with a high school diploma that does not assure them that the graduate has the core skills necessary for employment. However, there is no universally recognized credential other than the General Education Development exam (GED). A new competency-based credential is needed to certify students' skills.

- **Help parents and students understand and take advantage of different choices.** Better consumer information is needed to describe schools that differ in approach and emphasis, as well as the outcomes that can be expected based on those differences. States should recognize that many parents and students have limited access to this type of information and that special efforts are needed to inform minority and low-income parents and students of options available to them.

With more options, students will require more counseling and guidance to help them understand the alternatives available, as well as the requirements of both work and postsecondary education. States can bring the business community into schools through programs that provide employment counseling, job placement, and follow-up. Employers should be challenged to encourage their employees to become mentors in the schools, helping students identify a range of options for the future.

STRATEGY: Remove preventable barriers to learning. Schools cannot do the job alone. For many students, health care, counseling, crisis intervention, drug and alcohol education and treatment, family support, employment, or other services will be required to enhance their chances for success in school. Parental attitudes and behaviors are key. Schools will have to learn to work in new and much more responsive ways with a far wider group of partners. States should:

- **Ensure that students receive the health and social services they need.** Lack of availability, accessibility, and information prevents many students and their families from using the multiple systems of support they desperately need. States should encourage providers to integrate their services and create a comprehensive, client-focused network. Tailored dissemination strategies must be designed to get information on services directly to parents and students in different communities. State regulations that impede collaboration at the state and local level should be eliminated and program providers should be held accountable for how well students are being served. New approaches are needed to offer

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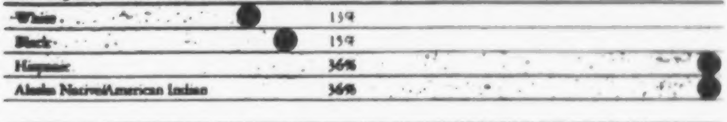
Figure 5 U.S. Dropout Rates by Race/Ethnicity, 1988

Percentage of 16- to 24-Year-Olds Who Have Not Graduated from High School and Were Out of School

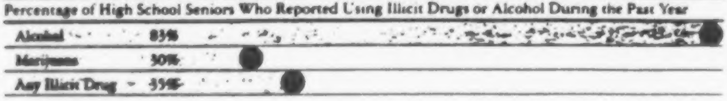


Notes: Data for American Indians are from 1982, more recent data are not available.

Sources: National Center for Education Statistics, *Dropout Rates in the United States: 1988* (Washington, D.C.: U.S. Department of Education, 1989), p. 16. Quality Education for Minorities Project, *Education That Works: An Action Plan for the Education of Minorities* (Cambridge, Mass.: Massachusetts Institute of Technology, 1990), p. 18.

Figure 6 Reported Drug or Alcohol Use by U.S. High School Seniors, 1989

Percentage of High School Seniors Who Reported Using Illicit Drugs or Alcohol During the Past Year



Note: "Any Illicit Drug" does not include alcohol.

Source: U.S. Department of Health and Human Services, *National High School Senior Survey*, Table 11, 1990.

comprehensive services at or near schools, to redefine the role of the school as a community center, and to provide the necessary training to educators and other providers.

- **Lead the fight against student drug and alcohol abuse.** Comprehensive drug education programs contribute to the reduction in drug and alcohol abuse. States should urge educators, counselors, and health care providers to identify the essential knowledge, personal and social skills, and attitudes that students and teachers need to understand the dangers of drug and for school personnel and students and developing a common message about the consequences of illegal activity, drug use can be deterred. Inconsistencies in the penalties for committing crimes based on where a student is caught — school, home, or public park — weaken rules. Educators should work with police to develop drug-free school zones that not only create a safe environment for students against drug sales, but also provide the education and counseling students need for prevention and treatment.

Early intervention programs also help young drug and alcohol users end their dependency. States can encourage parents, the media, police, counselors, educators, and health care providers to collaborate in developing outreach and treatment programs. School personnel play a key role in encouraging student participation in out-of-school intervention programs, as well as school-based anti-drug clubs, student assistance programs, or self-help groups.

States and communities need to expand programs and incentives that encourage and support responsible behavior. By working with parents, students, business leaders, and community members to keep schools safe, educators can create positive school environments and entrust students with personal responsibility. Students who do not use drugs and who respect the law should be recognized and rewarded. Alternate recreation programs are needed after school, at night, and on weekends.

- **Increase opportunities for work and further learning.** Lack of opportunity beyond school crushes motivation for many students. Employers and other private individuals have launched programs that begin in the elementary grades, guarantee each student who successfully completes school a job or college tuition, and provide intensive mentoring and counseling to support students throughout the school year. These programs offer a personalized and highly motivational approach that is needed by many more students.

- **Engage and support parents far more extensively in their child's learning at school and at home.** Parents' support and involvement are critical for successful school restructuring efforts. States must help parents better understand the need for dramatic changes in teaching and learning. Educators must reach out much more vigorously and creatively to parents, by visiting them at home, involving

> *"If we are to have all students achieving at high levels, parents must take a more active role in the learning process."*
>
> - Governor Rudy Perpich
>   *Minnesota*

them in school, and helping them work more effectively with their children at home. Employers should be urged to grant parents leave time to assist in their children's schools, attend parent conferences, and regularly communicate with their children's teachers.

The After-School Years

GOAL

By the Year 2000, Every Adult American Will Be Literate and Will Possess the Knowledge and Skills Necessary to Compete in a Global Economy and Exercise the Rights and Responsibilities of Citizenship.

In the past it was possible to tolerate high attrition rates in postsecondary education and a haphazard approach to school-to-work transition and adult learning. But today the waste in human potential that results no longer can be afforded. We need a more coherent adult learning system, one that enables us to compete more effectively in a highly demanding and rapidly changing global economy and offers more fulfilling lifelong learning opportunities for our citizens, regardless of their motives in seeking them.

The current system to educate, train, and retrain adults and out-of-school youth is a patchwork of public and private efforts. It includes two- and four-year degree-granting institutions; noncollegiate vocational, trade, and business schools; adult secondary education programs; formal apprenticeship programs; Adult Basic Education and English as a Second Language programs; and special programs for economically disadvantaged persons. This complex web of programs is further complicated by the fact that it is funded from federal, state, and private sources; governed by different regulations and requirements; and targeted to different recipients.

Today's adult system has three main problems, which begin in public secondary schools and continue in institutions of higher education.

First, it is fragmented. Separate funding streams restrict access to needed services and can result in service gaps to certain populations. Institutions of higher education lack ways to credit adults adequately for skills acquired in noninstitutional settings. Often universities will not accept credentials earned at vocational-technical schools or at community colleges. Second-chance programs tend to focus on short-term training that does not lead to the development of advanced skills or translate into recognized career development.

Second, it fails to serve large segments of people who need its benefits. Programs targeted to those with the greatest barriers to self-sufficiency reach less than 5 percent of the eligible population. The working poor often must incur large personal debts to pursue a part-time education and periodically must disrupt training due to finances. Those workers with the least education receive the least training from their employers.

And third, it does not provide sufficient opportunities to learn both the applied and conceptual skills needed to equip adults to perform in the workplace, to adapt to new requirements, and to advance along career paths.

Faced with such a chaotic system, states conventionally try through legislative and administrative actions to rationalize the roles and responsibilities of each institution or provider. This approach is particularly ill-suited here because there is insufficient information to make informed decisions about which providers should fill particular missions, whom they should serve, or which programs or services produce the greatest return on the public investment. Even when sufficient information is available, different systems invariably use incompatible language and measures for tracking inputs, outcomes, populations served, and funding.

A different approach is needed. This section includes two sets of strategies to tackle the problems of the diversified adult learning system. The first set of strategies applies to general adult education and training; the second set of strategies focuses on the special role of public two- and four-year colleges and universities within the adult system.

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The public adult education and training system accounts for only about half the nation's instructional activity involving adults. The other half is operated by employers, unions, and private vendors of educational services. State policy should seek to maximize the return on public investment in adult education while stimulating even greater private sector involvement. To do this, states need to help individual learners and employers become better informed consumers of the diverse public and private options available. States must find ways to provide incentives to businesses to invest in their own workforce and to fill gaps where the diversified adult education market is not meeting current needs. States also must reassess the use of existing public investments in adult education to ensure that services are responsive to their clients and are consistent with state human resource and economic development priorities. The following strategies reflect this approach:

STRATEGY: Determine the dimensions of the problem. One of the greatest obstacles to fixing the current system is the lack of accurate and reliable data. In addition, a clear consensus on the educational requirements of work and citizenship is needed among employers, workers, educators, and the general public. States should take steps to develop such a consensus and to determine how educational achievement levels within the state compare with the varied demands of society and the workplace.

- **Encourage employers to audit literacy and other skills of their own employees to identify needs as well as the skills of their current workforce.** Encourage employers to work with local school systems and other providers in public-private partnerships to make this information available.

- **Conduct a statewide literacy assessment as part of the 1992 National Adult Literacy Survey,** to find out how well people within the state can use printed and written information to function within society, to achieve their goals, and to develop their knowledge and potential.

- **Determine what services are available, who is participating in educational activities, where they are getting services, and who is paying for them.** This information should be used to set priorities, determine service gaps, target services, and reach out to people with unmet educational needs.

- **Identify and take immediate steps to eliminate state-imposed regulatory barriers to better coordinated services.** Work with the federal government to reduce federal regulatory and legislative barriers.

STRATEGY: Set priorities and performance expectations. States should bring together all state players in the adult education system to agree on priorities and performance expectations. Gaps in critical areas such as services to particular segments of the population, key industries, economic sectors, or geographic areas should be targeted for action. To drive performance of publicly funded programs and to encourage similar efforts in private programs, states should:

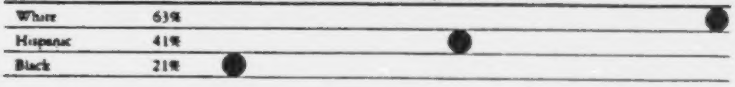
- **Require all publicly funded education, human resource, and, as appropriate, economic development programs, to identify measurable performance objectives consistent with policy priorities and the programs' diverse missions.** These core performance objectives should include learning outcomes defined by the skill requirements of the workplace and other parts of adult life. For example, states should require employment preparation programs to specify performance standards in terms of both skill achievement to meet local entry-level hiring requirements and employment. Similarly, states should specify learning outcomes for intergenerational literacy programs that include both parenting and employment demands.

- **Establish incentives to develop programs of sufficient intensity and duration to enable low-level learners to achieve necessary skills.**

STRATEGY: Create accountability systems. States should implement performance management systems that establish clear performance expectations for all publicly supported education and training providers in order to ensure quality of service within this diversified system. They should use multiple performance indicators and require providers to report to states on their annual performance. Private providers should be encouraged to participate as well. To promote greater accountability within adult learning systems, states should:

Figure 7 Young Adult Literacy by Race/Ethnicity, 1985

Percentage of Adults Considered "Adept" on NAEP Prose Comprehension Scale



Notes: Test measures prose literacy, the knowledge and skills required to gain understanding and use information from texts such as editorials, news stories, and poems. Sample includes persons twenty-one to twenty-six years old. A score of 300, considered "adept," indicates an ability to locate information in a news article or an almanac. Data on American Indians are not available.

Source: U.S. Department of Education, *Digest of Educational Statistics: 1989* (Washington, D.C.: Office of Educational Research and Improvement, 1989), p. 376.

- Develop consistent and reliable information on program performance that consumers can use to judge program effectiveness relative to labor market needs.

- Use information on performance, including service to targeted populations, to drive resource allocation policies including formula aid and the use of discretionary funds.

- Reward education and training providers, be they public institutions, proprietary schools, or others, for high performance and require corrective action from those providers that do not meet performance standards. If corrective action does not improve performance, states should close these programs or withdraw public financial support.

- Place greater emphasis on performance indicators in state licensing and accreditation policies and in funding formulas.

- Use state authority to set performance standards, and reward and sanction performance under the Job Training Partnership Act (JTPA) to achieve better outcomes and greater efficiencies in serving those with multiple barriers to success.

- Use state and federal discretionary resources to reward excellent performance and strengthen needed information and management systems.

- Invest in evaluation and research that cut across educational levels and systems so that the understanding of what works drives curriculum and instructional reform throughout the adult learning system.

STRATEGY: Establish comprehensive credentialing systems. The diverse public and private education providers that compose the adult learning system use a variety of incompatible credit and credentialing procedures. The lack of understandable criteria causes uncertainty about educational content. As a result, these credentials have limited currency among employers. In addition, students are often unable to transfer credits or build a cumulative and comprehensive set of credentials over time based on what they learn on the job, in school, and on their own.

A new competency-based approach to skill certification, beginning in school and continuing in the after-school years, is required to overcome these problems. A credential awarded for what people know or can do, not on how or where they learned it or what program they completed, will help providers and clients focus their efforts on what must be learned next, and therefore will improve efficiency. In addition, it will help employers and educational institutions screen people into, not out of, programs and jobs. This advantage is increasingly important in light of changing demographics and impending labor shortages. Although much of the work to create a more comprehensive and relevant credential system

"To continue to be an international leader, we need a workforce that continues to learn."

- Governor Carroll A. Campbell Jr.
  South Carolina

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needs to take place at the national level, to ensure consistency and portability across states, states should take the following actions to create an environment in which such a credential can be used effectively:

- Encourage both public and private educational institutions as well as alternative community- or work-based learning systems to use common terminology and compatible competency-based and other outcome standards in their current credit and credentialing practices. Encourage them to work with industry, education, and professional groups to establish such a common system. Pilot test the use of such a credential with selected industry groups such as manufacturing and health care.

- Strengthen assessment and certification systems in second-chance programs such as JTPA and Job Opportunities and Basic Skills Training Program (JOBS) and promote the use of multiple approaches to assessment, not just testing, to document skills and achievement. When testing is used, ensure that tests measure the kind of problemsolving, reasoning, and other skills employers demand and that test results can be communicated to employers and others in ways that are relevant to their needs.

- Urge employers to use credentials to reward entry-level workers on the basis of the level of competence they bring to the job.

- Ensure that two- and four-year education institutions establish agreements with each other and with other providers of educational services regarding the transfer of credits and learning credentials for the completion of degree or certificate programs.

STRATEGY: Promote professional development. State initiatives to upgrade the quality of educators in the adult system should emphasize good teaching and learning practices for adults. This consideration is especially important for those who work with nontraditional students such as out-of-school youth, adults with severe learning deficiencies, and minorities. States should:

- Establish professional development programs for staff and volunteers in publicly financed school- and non-school-based second-chance employment and literacy programs.

- Consider promoting the development and adoption of quality standards for teachers and administrators throughout the adult learning system.

- Expand and strengthen university and college-based teacher preparation programs for adult educators, especially in areas of experiential and applied learning.

STRATEGY: Expand opportunities for experiential learning, and increase the range of settings in which learning occurs. While many out-of-school youth and adults can be well served through a revitalized public education system, others will be better served through alternative community-based, nonprofit organizations, proprietary schools, and second-chance social service and employment preparation programs that provide opportunities for applied learning and related services. Many will learn best on the job, where tasks are concrete and immediately relevant. They will thrive in workplace-based literacy and skill training programs operated through employers, unions, and industry or professional associations. To promote the diversification of adult learning opportunities, states should:

- Insist on a substantial investment in educational services under job training and community service programs for youth both in and out of school and for unemployed adults, dislocated workers, and the current workforce, funded through JTPA, JOBS, Food Stamps, and a variety of other federal and state programs. States should emphasize education within their maternal and child health, child care, and other human resource programs, as well as correctional and housing programs. In addition, states should consider using their economic development programs to assist firms in determining their educational needs and developing strategies for addressing these needs on their own or in conjunction with educational institutions.

- Provide financial and other incentives, and undertake cooperative programs, to increase private sector investments in upgrading the skills of the current workforce. This measure is especially important for employees below the managerial level and for workers in small and medium-sized firms. Also, work with employers, unions, and industry associations to expand opportunities for work-based learning programs that build knowledge

> *"The future economic success of our nation requires a workforce that is prepared to face new challenges and has the ability to find solutions in a competitive global environment."*
>
> • Governor Terry E. Branstad
> *Iowa*

and skills through applied learning for youth while they are still in school and for those already in the workforce.

- Promote the diversification of public postsecondary programs and the establishment of alternative community-based and work-based learning systems using the expertise of effective nonprofit and community-based organizations through competitive grants or other programs. These programs should serve as lighthouses for innovation in publicly funded programs.

- Promote the development of intergenerational, workplace, and other literacy programs that provide instruction within a real-life context.

- Use state policy direction, demonstrations, technical assistance, research, and evaluation to encourage the closer integration of academic and vocational instruction at the postsecondary level. Help providers of educational services keep their curriculum current with the changing skill demands of the workplace.

- Diversify the use of adult education funds to support effective nonpublic programs, including volunteer efforts.

- Support statewide research, development, and technical assistance efforts that promote innovation and enhanced capacity to design and deliver effective educational programs for adults. Encourage service providers to respond to individual needs through flexible scheduling, support services, and financial assistance to part-time students.

- Use instructional technology and telecommunications to deliver literacy and other services to remote areas and to meet individual needs for self-paced, open-entry/open-exit instruction.

STRATEGY: Promote self-directed learning and consumer choice. A comprehensive system for lifelong learning will require that adult learners be able to define and redefine clear career and learning goals throughout their working lives. It also will require that adult learners have sufficient consumer information to select the most appropriate education and training provider. To promote self-directed learning and consumer choice, states should:

- Promote the idea of lifelong learning in school-to-work transition programs by combining education and work and by helping with career decisionmaking.

- Expand consumer information systems such as those provided through State Occupational Information Coordinating Committees to more effectively provide consistent and reliable information to adult learners about the programs, organization, and performance of all public and private service providers.

- Develop better local labor market information on occupational requirements and the supply and demand of workers to meet these needs.

- Support and strengthen the development of career counseling resources in libraries, employment service offices, and other appropriate facilities to help youth and adult learners make these decisions at arm's length from potential providers. This career counseling will help adult learners develop and continually reexamine their career and learning plans throughout their adult years.

- Inform the general public through public awareness campaigns and other means about available information and counseling services.

Colleges and Universities

America's postsecondary education system is considered among the world's strongest, because of its world-class research system and the diverse range of institutions within it. Today's reality is that research funding provides crucial support to campuses. As a result, teaching, the most basic function, is often devalued.

While there is a sense from employers and others that the quality of a college education is deteriorating, little hard evidence is available to substantiate this claim. Yet when states

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require campuses to assess student learning systematically, faculty often resist initially. State incentives to improve teaching and learning are rare because most funding formulas are based on enrollment; the head count still matters more than what students learn.

Too few students, particularly blacks, Hispanics, and Native Americans, attend college. The likelihood of finishing a degree, especially in large public institutions, remains shockingly low. According to a recent study, only 28 percent of black students and 50 percent of white students completed a college degree in six years. And fewer U.S.-born students are obtaining Ph.D. degrees, despite a looming faculty shortage.

Adult students face many obstacles, including a shortage of classes offered at convenient times. Indeed, colleges continue to schedule, format, and teach classes as if the student body were entirely composed of eighteen- to twenty-four-year-olds. Instead, nearly half of all college students are older or in the workforce. Students trying to get credit for coursework taken from community colleges or learning systems outside the traditional setting too often find the credit or experience will not transfer.

Higher education's efforts to strengthen the preparation of teachers and administrators have been weak and disappointing. After a decade of intense state efforts, improving public schools is still a low priority of colleges and universities. The importance of improved basic education is part of the rhetoric of college and university leaders, yet schools of education remain weak and their mission undervalued. Collaboration between arts and science faculties and education faculties to improve the preparation of teachers is the exception, not the rule. And few preparation programs collaborate with the public schools to improve the clinical training of teachers.

For campus priorities to change, state leaders and university presidents must stimulate new efforts, support institutions and programs that produce results, and evaluate progress. Leaders should set challenging goals and insist upon accountability, leaving the task of tailoring and managing specific programs to public postsecondary institutions and to providers of private and community education and training. States should:

> ***"We must not be complacent about the quality of our higher education institutions. We must demonstrate concrete results, represented by the enhanced performance of our students, to assure the public that their resources are being invested wisely."***
>
> - Governor John Ashcroft
>   *Missouri*

STRATEGY: Define what students should learn and hold institutions accountable for the results. If states fail to set expectations high enough and to focus adequately on achievement, they will fail to engage the attention of institutions and their leaders. States need to encourage public postsecondary institutions to define the educational outcomes that are appropriate to their institutional missions. States should continue the recent trend of requiring that public postsecondary institutions systematically assess what their students learn. Private colleges and universities should be encouraged to do this as well. The assessment processes should be consistent with institutional missions, should rely on multiple measures of performance, and should aim to improve both curriculum and the performance of students.

- **Integrate a focus on outcomes into all policy initiatives related to postsecondary education.** For example, policies to regularly review the continuation of campus academic programs should include a review of student performance outcomes.

- **Review current funding formulas to determine whether financial incentives are aligned with state priorities.** To emphasize educational outcomes, states must be sure the incentives do not reward enrollment alone. Postsecondary institutions that demonstrate progress in student achievement should be rewarded and institutions that consistently fail to demonstrate good faith efforts or to produce acceptable results should be penalized.

- **Monitor student participation and completion rates by institution and by minority group status.** This procedure will stimulate institutions to improve both access and achievement and will enable states to collect and report this information. Institutions could collect information from first-time students about their educational or training objectives.

This procedure will help sort out those students who intend to graduate from those who enroll only for specific courses.

STRATEGY: Remove barriers to the mobility of traditional students and adult learners. A comprehensive adult learning system must enable individuals to move in and out. States can play an important role by establishing procedures that give students the flexibility to transfer credits and credentials from one institution or agency to another.

- **Negotiate and develop agreements between two- and four-year institutions, and between higher education institutions and other adult education and training programs regarding transfer of credit, application of credits to degree programs, and continuity of need-based student financial assistance.**

- **Establish an appeals process to use when institutions refuse to accept graduation requirement credits earned at another institution or nonpostsecondary adult program.**

- **Offer community college students and adults served by other learning systems appropriate information regarding opportunities to transfer to baccalaureate-granting institutions, and regarding assessment and counseling.**

- **Assure that appropriate courses for transfer are offered frequently at community colleges.**

STRATEGY: Encourage and provide incentives for good teaching and help faculty upgrade and improve their teaching skills. States need to ensure that the teaching mission of colleges and universities is not eroded, particularly at a time when society's need for effective teaching and learning is so great. An important opportunity exists to redress the balance between the conflicting demands of research and teaching as the majority of current faculty members retire over the next two decades and are replaced by a new generation of scholars.

For too long, faculty have relied on the traditional, passive lecture method. Given the increasing diversity of college students, faculty need to experiment with new instructional methods to reach at-risk and adult students. Few colleges and universities have fully explored the potential of emerging technologies, which can improve access to courses and programs away from the campus and improve instruction by providing more individualized, self-paced, and active approaches to learning. Faculty need to learn alternative ways to teach and to use new technologies. They need to learn how to incorporate applied learning experiences inside and outside the classroom.

- **Support and reward public postsecondary institutions whose primary mission is teaching;** at the same time, prevent these institutions from de-emphasizing teaching in their formal mission statements or in faculty promotion and tenure processes. Encourage departments in all institutions to reward instructional excellence and to strike a balance between teaching and research.

- **Offer incentives to colleges and universities to better serve adult learners** by responding to the needs of business and industry, and of individuals. Institutions should offer classes at varied times and locations; develop schedules with alternative formats, such as three-week courses, or courses that are completed in two full weekends; create programs to certify specialities such as real estate development or direct marketing; provide day care and counseling services; and consider financial aid packages for part-time students.

- **Encourage faculty to rethink the content and structure of courses and programs in the context of new telecommunications technologies.** The evaluation and dissemination of experiments using new technologies should be a high priority.

- **Create competitive state incentive programs to encourage institutions and faculty to respond to state priorities.**

Consider, for example, a modest state-level grant program modeled after the federal Fund for the Improvement of Postsecondary Education, which focuses on improving postsecondary teaching and learning. Proposals funded might include efforts to develop assessments that emphasize higher-order thinking skills; to develop alternative modes of instruction that will better serve at-risk and/or adult students; and to plan for the use of technology in the classroom.

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Table 1 U.S. College Degree Attainment by Race/Ethnicity, 1986–87

Race/Ethnicity	B.A.s Awarded	M.A.s Awarded	Ph.D.s Awarded
White	841,280	228,870	24,435
Hispanic	26,990	7,044	750
American Indian/Alaskan Native	3,971	1,104	104
Black	56,555	13,867	1,060
Asian/Pacific Islander	32,618	8,558	1,097
Nonresident	29,308	29,898	6,587

Source: Quality Education for Minorities Project, *Education That Works: An Action Plan for the Education of Minorities* (Cambridge, Mass.: Massachusetts Institute of Technology, 1990), p. 22.

STRATEGY: Create both expectations and incentives for higher education to become involved in state efforts to improve elementary and secondary public schooling.

- Hold university presidents and boards of trustees of all state colleges and universities with teacher education programs accountable for identifying these programs as high institutional priorities and for taking immediate steps to turn inadequate programs around. Terminate teacher preparation programs at institutions that fail to take corrective action.

- Consider moving teacher training to the graduate level and devoting the undergraduate years for prospective teachers to the development of a strong academic base.

- Ensure that the education faculty and arts and sciences faculty collaborate to prepare teachers. An identifiable cluster of faculty should be responsible for developing a coherent curriculum, evaluating it, and ensuring its improvement.

- Develop new partnerships that call for public institutions of higher education and elementary and secondary schools to share responsibilities for the clinical aspect of teacher education. Too often this critical part of teacher preparation is conducted in a haphazard way. The result is often the perpetuation of bad practice.

- Require public colleges and universities to develop explicit plans to recruit and prepare minority teachers.

- By the eighth grade, inform all youngsters of postsecondary education options in their state, admissions requirements, and financial assistance; keep their parents informed, as well.

- Encourage postsecondary institutions and faculty to identify and reach out to educationally disadvantaged youngsters at an early age through mentoring and other early intervention programs, such as summer residential experiences.

- Follow the progress of high school graduates in postsecondary education; report this information to high schools annually and encourage the high schools to use the information to improve student achievement.

- Provide incentives, such as competitive grants, to postsecondary faculty and staff to collaborate with elementary and secondary teachers to revamp and align the curriculum and address common instructional and scholarly concerns; to serve as mentors and tutors to educationally disadvantaged students in K-12; to conduct research on teaching and learning in their discipline that will serve all levels of education; and to take the lead in revitalizing teacher preparation.

STRATEGY: Make state efforts to increase the college enrollment and completion rates of underrepresented minorities a high priority. Without improving the education of minorities, few states can hope to achieve their economic or educational goals. Yet little progress has been made in bolstering minority enrollment and graduation rates. The proportion of minority college-age students from eighteen to twenty-four has declined since 1976. State leadership is essential to a sustained and effective national and institutional strategy. And states must be consistent and comprehensive in their approach.

- Enlarge the pool of minority college entrants over the long term by implementing strategies to improve preschool, elementary, and secondary education.

- **Develop, coordinate, and support state, private, and higher education efforts that guarantee admission** and offer counseling and financial assistance incentives to high-achieving low-income students beginning in the elementary years.

- **Boost financial assistance to students from low-income families and emphasize grants and work-study programs rather than loans.**

- **Ensure that all institutions, regardless of their mission, take direct responsibility for recruiting minority students and improving their success rates;** state accountability measures should support rather than undermine objectives for equal opportunity.

- **Encourage postsecondary institutions to diversify faculty and staff;** consider incentives to minority graduate students to teach in-state.

- **Target groups that have been underrepresented in mathematics, science, and engineering,** including blacks, Hispanics, Native Americans, and women, to increase the nation's professional and technical capacity in these critical fields.

Mathematics and Science: A Comprehensive Approach

GOAL

By the Year 2000, U.S. Students Will Be First in the World in Mathematics and Science Achievement.

The preceding recommendations for improving preschool education, elementary and secondary education, and higher education, are integral to becoming first in the world in mathematics and science. However, reaching this goal also will require an extraordinary effort targeted to mathematics and science.

Problems are rampant. Students lose interest in mathematics and science as early as the elementary years. They lack classroom exposure to hands-on activities and applications to real-world problems. The mathematics and science curriculum is generally weak. Textbooks, which dominate instruction at all levels, are inadequate, often boring, and quickly out of date. Current assessment instruments test the basic skills, rather than more advanced skills. Students are unaware of both the opportunities in scientific and technical fields and the education needed to enter them.

The present system is marked by a disparity of resources in mathematics and science education — too many children, often in inner cities and rural areas, attend schools that lack laboratories, advanced or even basic courses, and teachers certified in the fields they are teaching. These disparities also may be present in community colleges in inner cities or rural areas.

Too often elementary teachers are unprepared to teach these subjects. As currently trained, too few could take advantage of an enriched mathematics or science curriculum. Often, the best teachers in these subjects are moved up to the next level — elementary to junior high, for example — depleting the ranks in lower grades. Ongoing professional development to improve the skills of existing teachers is totally inadequate. Teachers, themselves lacking confidence in their knowledge of these subjects, hold low expectations of students, particularly of female and minority students. Too few qualified college graduates in mathematics and science are entering teaching, resulting in a shortage at the secondary level. Finally, the secondary curriculum is flawed.

In higher education, too few students major in mathematics and science, and too few who enter these programs complete them. College students in introductory mathematics and science courses are taught by graduate assistants rather than the best teaching professors. These courses are used to weed students out rather than to improve deficient skills. As a result many potential scientists are lost at the entry level. Women and underrepresented minorities who want to major in these subjects become discouraged by the lack of a supportive climate. The college and university curriculum is in need of drastic reformulation.

Despite these problems, there is much to build on. Several national efforts are underway to improve mathematics and science education. Professional mathematics and science associations — such as the National Council of Teachers of Mathematics, the Mathematical Sciences Education Board, the American Association for the Advancement of Science, and the

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Table 2 Math Achievement of 13-Year-Olds, Selected Countries and Canadian Provinces, 1988

Percentage of 13-Year-Olds Performing At or Above Each Level

Country or Canadian Province	Solving Simple Problems	Solving Two-Step Problems	Understanding Concepts
Korea	95	78	40
Quebec (French)	97	73	22
British Columbia	95	69	24
Quebec (English)	97	67	20
New Brunswick (English)	95	65	18
Ontario (English)	92	58	16
New Brunswick (French)	95	58	12
Spain	91	57	14
United Kingdom	87	55	18
Ireland	86	55	14
Ontario (French)	85	40	7
United States	78	40	9

Source: Educational Testing Service, *A World of Difference: An International Assessment of Mathematics and Science* (Princeton, N.J.: Educational Testing Service, 1989), p. 17.

National Science Teachers Association—have done much of the hard thinking on what students should know and be able to do throughout their school careers in mathematics and the sciences. A number of partnerships, such as the Triangle Coalition, have launched national campaigns to improve the nation's scientific capacity.

Federal agencies, including the Department of Energy, the National Aeronautics and Space Agency, the Department of Defense, and the National Science Foundation, have begun far-reaching initiatives to strengthen mathematics and science instruction. The National Science Foundation's new statewide systemic initiatives will help states coordinate their reform efforts in mathematics and science education. Finally, the federal Task Force on Women, Minorities, and the Handicapped in Science and Technology has provided clear direction for policymakers to increase the participation of these under-represented groups.

Building on these efforts, states should consider taking the following steps:

STRATEGY: Wage an all-out effort to recruit and prepare excellent mathematics and science teachers.

- **Make salaries for mathematics and science teachers competitive in the marketplace.** Without more competitive salaries, schools will never be able to attract the qualified teachers necessary to meet this goal.

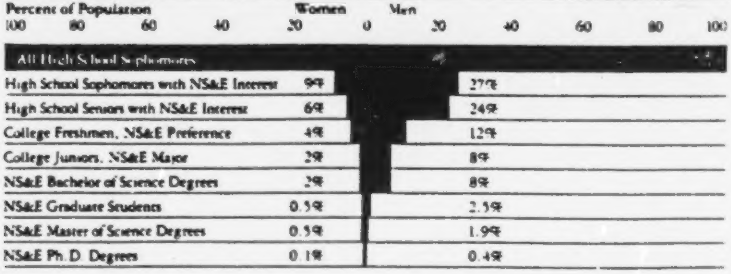
- **Provide incentives to mathematics and science faculty members to collaborate with education faculty in revamping the collegiate mathematics and science education curriculum, drawing on national innovations in curriculum development.**

- **Offer special incentives to induce able students to enter and remain in teaching,** including fellowships or forgivable loans for students who commit to four years in science and math teaching, with a special bonus for teaching in areas with an undersupply of qualified teachers, such as inner cities and rural areas; opportunities to work in labs and other scientific settings in the summer; opportunities for specialization; and sabbaticals to upgrade skills.

- **Provide incentives to business for loaning scientific and technical professionals to schools for several years, either to teach at the junior or senior high school level or to offer professional development courses to upgrade skills of teachers at all levels.**

- **Include hands-on experimentation, problemsolving exercises, and related instructional strategies in performance assessments for licensure for elementary teachers.** Licensure assessment for secondary mathematics and science educators should require similar demonstrations at an advanced level.

Figure 8 Participation in Natural Sciences and Engineering by U.S. Males and Females



Note: The natural sciences include the physical, environmental, mathematical, agricultural, and biological sciences.

Source: National Science Foundation, *Future Scarcities of Scientists and Engineers: Problems and Solutions* (Washington, D.C.: National Science Foundation, 1989), p. 17.

- Encourage collaboration among mathematics, science, and engineering faculty and their public school counterparts—on curriculum issues, instructional methodologies, and research. Include public school teachers in research projects.

- Hold science, mathematics, and engineering departments accountable for attracting and graduating more women and minorities.

- Offer substantial loans to U.S. students, especially to members of underrepresented groups in pursuit of doctoral degrees in mathematics, science, and engineering, with a forgiveness clause for service on the faculty of a state institution.

- Encourage institutional leadership and faculty to accept the challenge of enabling all students to master the entry-level courses in these subjects; reward the best teaching professors for teaching introductory mathematics and science courses.

- Strengthen the academic component, and mathematics and science in particular, in the vocational-technical curriculum in community colleges. Make it easier to transfer credits from two- to four-year programs in science and engineering.

- Expand postsecondary programs that train workers to use advanced technologies, such as microelectronics, computer applications, and robotics.

STRATEGY: Enlist business and industry as a major partner in this effort.

- Encourage corporate efforts to focus public attention on the need for school reform, to encourage young people to enter science and technical careers, and to impart the value of science to our society.

- Provide incentives to industry and business to work with schools to improve science and mathematics education by offering the use of equipment, including calculators, computers, and software; by loaning scientific personnel to the schools to teach or to help teachers; by serving as mentors and tutors to school children; and by helping with ongoing professional teacher training.

- Ask the business community to work with schools, colleges, and universities to keep educators informed of current workforce needs; hold the education system responsible for responding.

- Involve corporate leaders in efforts to plan and coordinate a statewide approach to mathematics and science education.

- Broaden public/private partnerships to provide the technical training necessary to support industry modernization efforts.

National leadership is needed to make the public aware of the importance of mathematics and science and to keep the goal before the public and the federal government. While many federal agencies currently are involved in promoting mathematics and science education, these efforts need to be coordinated. The federal

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STRATEGY: Launch a massive teacher retraining effort.

- Upgrade ongoing training programs for elementary teachers in mathematics and science; link the training to recommended curriculum improvements. Include hands-on training with laboratory experiments and ideas for enrichment.

- Use the best mathematics and science teachers to their fullest potential through arrangements such as distance learning and specialized staffing, and to train other teachers in these subjects.

- Provide opportunities for secondary school mathematics and science teachers to learn of research developments through seminars, attendance at scholarly meetings and summer seminars, and opportunities to work in private sector or federal laboratories.

- Offer teachers and counselors at all levels training to help them overcome gender and ethnic stereotyping that impedes the progress of some children.

- Help teachers develop and try new instructional techniques that will be successful with students whose learning styles vary, so that all children will succeed in these subjects.

STRATEGY: Capitalize on national innovations in curriculum development.

- Help schools and school districts use the results of the national efforts to improve school curriculum. Train teachers to use the new curriculum.

- Stimulate the interest of middle school students in mathematics and science. For example, encourage schools to use science curriculum that capitalizes on adolescents' natural curiosity about bodily changes to teach biological and life sciences and behaviors for healthful lifestyles.

- Develop assessment approaches that enable students to demonstrate their understanding of and ability to apply mathematical and scientific knowledge. Problemsolving and hands-on experimentation should be a part of these assessments.

- Challenge textbook publishers to revamp, strengthen, and drastically upgrade textbooks in science and mathematics. Encourage educators to use a variety of materials beyond textbooks.

- Encourage schools to collaborate with museums, industry, zoos, and other science agencies, to use out-of-school science and mathematics activities to enrich the curriculum. Offer more applied opportunities to teachers and students alike.

STRATEGY: Ensure that all children have the opportunity to take basic and advanced mathematics and science coursework from qualified teachers and to use adequate equipment, and increase the number of students enrolling in advanced courses.

- Encourage schools to provide the necessary information and counseling needed to make students aware of the opportunities and educational requirements for scientific and technical careers.

- Create a mathematics and science teacher corps that can go into understaffed areas — or use distance learning technology to offer advanced mathematics and science. Realize that qualified assistants must work with students on site and that, in some subjects, on-site laboratory work will still need to be done.

- Monitor high school offerings and the placement of high school teachers statewide. Be prepared to correct inequities as necessary. Provide incentives to schools to pool resources when they do not have enough students to offer advanced mathematics and science courses.

- Provide assistance to schools to help them develop and equip laboratories or to purchase computers or software, or offer incentives to business to help in particularly pressing cases.

STRATEGY: Insist that postsecondary education play an integral part in meeting the goal.

- Revitalize the undergraduate mathematics and science curriculum for all students and relate the newly reformulated curriculum to changes in the elementary and secondary curriculums.

government has an important role to play in supporting research to develop and disseminate superior instructional methodologies in mathematics and the sciences and alternative assessment methods, including computer-assisted and performance assessments. The state-by-state National Assessment of Educational Progress in mathematics and the sciences needs to be continued, based on the results of the pilot assessment being conducted in 1990.

As federal resources become available, the federal government should consider increasing forgivable loans and scholarship programs for undergraduates who are interested in teaching science and mathematics and for American citizens who wish to pursue graduate degrees in these subjects. These resources should be targeted to women, minorities, and the handicapped. Programs to improve the science and mathematics skills of elementary teachers need to be expanded. In addition, the federal government could fund programs for secondary science and mathematics teachers to help them upgrade their skills and keep current in their field. Finally, the federal government could help disadvantaged schools purchase laboratory and new technological equipment.

APPENDIX E

SUGGESTED LEGISLATION

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R-417	Directs Department of Education to conduct study concerning tracking of academic histories of pupils in public schools	109
R-419	Urges public schools to participate in Nevada School Improvement Project	113
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Resolution of the Legislative Commission's Subcommittee to Study Public Elementary and Secondary Education in Nevada

Urging the Nevada Legislature to continue efforts to reduce the size of classes in the public schools

WHEREAS, In the Class-size Reduction Act of 1989, Assembly Bill No. 964, the Nevada Legislature provided that:

1. A successful educational system in Nevada will directly affect the future of this state;
2. The ratio of pupils to teachers in a classroom where core curriculum is taught, particularly in the earliest grades, is one of the most determinative factors in the quality of education received;
3. The intended goal of the Legislature is to achieve a pupil-teacher ratio of no more than 15 pupils per teacher in a classroom where core curriculum is taught; and
4. Achieving such a reduction throughout the state is our most critical priority; and

WHEREAS, The Legislative Commission's Subcommittee to Study Public Elementary and Secondary Education in Nevada recognizes that the reduction in the pupil-teacher ratio has proven to be of benefit to the pupils in the public schools; now, therefore, be it

RESOLVED BY THE LEGISLATIVE COMMISSION'S SUBCOMMITTEE TO STUDY PUBLIC ELEMENTARY AND SECONDARY EDUCATION IN NEVADA, That the 67th session of the Nevada Legislature is hereby urged to continue efforts to reduce the size of classes in the public schools; and be it further

RESOLVED, That a copy of this resolution be prepared and transmitted to each member of the 67th session of the Nevada Legislature.

Adopted by the Legislative Commission's Subcommittee to Study Public Elementary and Secondary Education in Nevada

Assemblyman Wendell P. Williams
Chairman

SUMMARY--Directs Department of Education to conduct study concerning tracking of academic histories of pupils in public schools. (BDR R-417)

CONCURRENT RESOLUTION--Directing the Department of Education to conduct a study concerning the tracking of the academic histories of pupils in the public schools of this state.

WHEREAS, A successful educational system in Nevada will directly affect the future of this state; and

WHEREAS, The placement of pupils in the proper classrooms is a determinative factor in the quality of education received; and

WHEREAS, The practice of tracking the academic histories of pupils has been used as a means of determining the placement of pupils in the proper classrooms; and

WHEREAS, Tracking the academic histories of pupils has provided school administrators with the information necessary to group together in classrooms those pupils who have similar academic abilities in an effort to provide each pupil with an education which is more specifically tailored to his level of ability than would otherwise be possible; and

WHEREAS, The quality of education in this state would be enhanced by studying the effectiveness of tracking and by comparing it with innovative teaching methods developed as alternatives to tracking; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE CONCURRING, That the Department of Education is hereby directed to conduct a study of the feasibility and effectiveness of tracking the academic histories of pupils enrolled in the public schools of this state; and be it further

RESOLVED, That the study must include an evaluation of:

1. The prevalence of the use in the public school system of tracking pupils in particular courses of study;

2. The effect tracking has on the behavior of pupils and the expectations of their teachers;

3. Whether additional training of teachers would be necessary to enable them to use the innovative teaching methods offered as alternatives to tracking and the cost of that additional training;

4. The need to measure the extent of grouping pupils according to their abilities and monitor the effectiveness of specific forms of tracking;

5. The quality of instruction and resources provided to pupils with lower academic abilities and pupils who are members of racial and ethnic minorities;

6. Parental attitudes toward tracking pupils enrolled in public schools;

7. The use of gifted pupils as role models for other pupils;

8. The impact that the elimination of tracking would have on existing programs for gifted pupils; and

9. Any other issues related to tracking that are determined by the Department of Education to be pertinent;

and be it further

RESOLVED, That the results of the study and any recommendations for legislation be reported to the 68th session of the Nevada Legislature; and be it further

RESOLVED, That the   of the   prepare and transmit a copy of this resolution to the Superintendent of Public Instruction.

SUMMARY--Urges public schools to participate in Nevada School Improvement Project. (BDR R-419)

CONCURRENT RESOLUTION--Urging all public schools in the State of Nevada to participate in the Nevada School Improvement Project established by the Department of Education.

WHEREAS, In 1986, the Department of Education initiated the Nevada School Improvement Project; and

WHEREAS, The Nevada School Improvement Project was established as a voluntary project to provide training to the faculty members of participating public schools to assess the needs of their schools and use that information to plan and carry out improvement activities for their schools; and

WHEREAS, Many of the schools participating in the Nevada School Improvement Project have established programs that have improved the quality of education provided to the pupils attending those schools; and

WHEREAS, The number of schools voluntarily participating in the Nevada School Improvement Project has increased significantly since its inception in 1986, but not all public schools have volunteered to participate in the improvement project; and

WHEREAS, Administrative leadership and strong support from the faculty members of the public schools are essential to the continued progress of the Nevada School Improvement Project; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE CONCURRING, That all public schools in the State of Nevada are hereby urged to participate in the Nevada School Improvement Project; and be it further

RESOLVED, That copies of this resolution be transmitted by the of the to the boards of trustees of all county school districts in this state for distribution to the public schools within their school districts.

SUMMARY--Urges State Board of Education to take certain actions related to instruction of mathematics. (BDR R-420)

CONCURRENT RESOLUTION--Urging the State Board of Education to modify the methods of testing and instructing pupils in mathematics and urging the State Board of Education to expand the curriculum offered to pupils in this state.

WHEREAS, The Nevada Legislature recognizes the importance of providing an education that will prepare all pupils for successful lives and careers in the 21st century; and

WHEREAS, In order to assess accurately the achievement of pupils, it is necessary to align testing with the current mathematics curriculum; and

WHEREAS, The lack of mathematical and technological skills creates an obstacle to obtaining employment and participating fully in Nevada's work force and society; and

WHEREAS, The State Board of Education is responsible for establishing the curriculum, testing and standards of instruction for pupils; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE CONCURRING, That the State Board of Education is hereby urged to modify the methods of testing the mathematical abilities of individual pupils so that the material covered by the tests conform with the course of study for mathematics adopted for pupils in Nevada and the curriculum and evaluation standards that have been established by the National Council of Teachers of Mathematics; and be it further

RESOLVED, That the State Board of Education is hereby urged to promote the restructuring of the core curriculum to ensure that all pupils have continuous access to the classes in mathematics and technology which will prepare them for entry into the largest number of careers; and be it further

RESOLVED, That the State Board of Education is hereby urged to adopt regulations which require each school district to use computers and calculators in the instruction and allow their use at least in part during the testing of pupils in mathematics; and be it further

RESOLVED, That the of the prepare and transmit a copy of this resolution to the State Board of Education.

SUMMARY--Urges boards of trustees of county school districts to adopt daily class schedules for public elementary schools which include fixed period of uninterrupted teaching time during each school day. (BDR R-421)

CONCURRENT RESOLUTION--Urging the boards of trustees of all county school districts to adopt daily class schedules for public elementary schools which include a fixed period of uninterrupted teaching time during each school day.

WHEREAS, The creation and promotion of effective learning environments is necessary to improve and maintain the quality of education provided to pupils attending public schools in this state; and

WHEREAS, Classrooms in elementary schools are often interrupted throughout the day for various reasons such as school announcements, calling pupils out of the classrooms, assemblies and conferences; and

WHEREAS, These interruptions impede the ability of teachers to provide quality instruction to their pupils; and

WHEREAS, Uninterrupted instruction is of particular importance to pupils in elementary schools in order to develop basic learning skills at an early age; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE CONCURRING, That the boards of trustees of all county school districts in the State of Nevada are hereby urged to adopt daily class schedules for public elementary schools in their districts which include a fixed period of uninterrupted teaching time during each school day; and be it further

RESOLVED, That copies of this resolution be transmitted by the of the to the boards of trustees of all county school districts in this state.

SUMMARY--Requires physician to obtain under certain circumstances informed consent from parent or legal guardian of minor before prescribing or administering certain medication to minor. (BDR 40-422)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: No.

AN ACT relating to health care; requiring, under certain circumstances, the informed consent of a parent or guardian of a minor before certain controlled substances may be prescribed or administered to the minor; requiring the state board of health to prepare forms for informed consent to be used by physicians prescribing such treatment; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 439 of NRS is hereby amended by adding thereto a new section to read as follows:

1. Except as otherwise provided in NRS 129.030, a physician shall not prescribe or administer to a minor any controlled substance that has been placed in schedule II by the state board of pharmacy pursuant to the provisions *of NRS 453.176, unless he first obtains informed consent in writing from the parent or legal guardian of the minor freely and without coercion. The informed consent must be obtained on a form provided by the state board of health.*

2. The state board of health shall prepare and provide to physicians upon request the appropriate form for informed consent. The form must include:

(a) The nature and consequences of the treatment;

(b) The reasonable risks, possible side effects, benefits and purposes of the treatment;

(c) A description of the need for the continuous monitoring of the patient by a physician; and

(d) A description of any alternative treatment available.

3. The state board of health shall revise each form for informed consent as necessary to keep the medical information current.

4. The state board of health shall charge and collect a fee for all forms distributed pursuant to this section that is adequate to cover the cost of producing the forms.

Sec. 2. This act becomes effective upon passage and approval for the purpose of preparing the forms for informed consent required by section 1 of this act and on October 1, 1993, for all other purposes.

SUMMARY--Urges State Board of Education to adopt policy of cooperation to facilitate diagnosis and treatment of pupils with attention deficit hyperactivity disorder. (BDR R-423)

CONCURRENT RESOLUTION--Urging the State Board of Education to adopt a policy of cooperation to facilitate the diagnosis and treatment of pupils with attention deficit hyperactivity disorder.

WHEREAS, Attention deficit hyperactivity disorder in school-aged children can influence behavior, academic performance and social and emotional adjustment; and

WHEREAS, It is estimated that from 2 to 5 percent of school-aged children suffer from some form of attention deficit hyperactivity disorder and that the incidence of the disorder is increasing; and

WHEREAS, Associated features of the disorder include low self-esteem, mood lability, low frustration tolerance and temper outbursts; and

WHEREAS, Academic underachievement is characteristic of most children with this disorder; and

WHEREAS, Attention deficit hyperactivity disorder has a significant impact on the educational system because its behavioral manifestations are often disruptive to the classroom environment and detract from the learning experience of other pupils; now, therefore, be it

RESOLVED BY THE   OF THE STATE OF NEVADA, THE

               CONCURRING, That the State Board of Education is hereby urged to adopt a policy of cooperation with medical facilities, parents, educators, physicians, psychologists, school counselors, social workers and marriage and family therapists to facilitate the diagnosis and treatment of pupils with attention deficit hyperactivity disorder; and be it further

RESOLVED, That the policy include programs for the placement of such pupils in the proper classrooms, programs of physical education, and strategies for behavior modification and counseling, to ensure that treatment of the disorder with drug therapy is not the only treatment available; and be it further

RESOLVED, That the   of the   prepare and transmit a copy of this resolution to the State Board of Education.

SUMMARY--Requires establishment of program for referral of pupils with attention deficit hyperactivity disorder to physicians for diagnosis and treatment. (BDR 34-424)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: Yes.

AN ACT relating to education; requiring the state board of education to establish a program for the referral of pupils believed to have attention deficit hyperactivity disorder to physicians for diagnosis and treatment; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 392 of NRS is hereby amended by adding thereto a new section to read as follows:

1. The state board shall establish by regulation a program for the referral of pupils believed to have attention deficit hyperactivity disorder to qualified physicians for the proper diagnosis and treatment.

2. As used in this section, "qualified physician" means a physician whose specialty includes the diagnosis and treatment of children with attention deficit hyperactivity disorder and who treats such children on a regular basis.

SUMMARY--Makes various changes to provisions governing fund for enhancement of occupational education. (BDR 34-425)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: Contains Appropriation.

AN ACT relating to education; providing that the fund for the enhancement of occupational education be used for programs for pupils in certain grades; requiring the state board for occupational education to make certain allocations from the fund annually; making an appropriation; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. NRS 388.367 is hereby amended to read as follows:

388.367 1. There is hereby created in the state treasury the fund for the enhancement of occupational education to be administered by the state board for occupational education. The interest and income earned on the money in the fund, after deducting any applicable charges, must be credited to the fund.

2. Money in the fund must be used for programs of occupational education for pupils [.] *in grades 9 to 12, inclusive.* The money may be used to establish

classes to introduce pupils *in grades 9 and 10* to occupations in general, and to improve occupational classes for pupils [.] *in grades 10, 11 and 12.* The state board for occupational education shall adopt courses of study establishing minimum standards for those programs and classes.

3. Money in the fund must not be:

(a) Considered in negotiations between a recognized organization of employees of a school district and the school district; or

(b) Used to reduce the amount of money which would otherwise be made available for occupational education in the absence of this section.

4. The state board for occupational education shall annually establish a basic allocation of $25,000 to each school district which provides occupational instruction in grades 9 to 12, inclusive, and distribute the remainder of the money in the fund in proportion to the number of pupils in grades 9 to 12, inclusive, who are enrolled in programs of occupational education on the last day of the first month of the school year.

Sec. 2. 1. There is hereby appropriated from the state general fund to the fund for the enhancement of occupational education created pursuant to NRS 388.367:

For the fiscal year 1993-94	$2,252,781
For the fiscal year 1994-95	$2,252,781

2. Any balance of the sums appropriated by subsection 1 remaining at the end of the respective fiscal years must not be committed for expenditure after

June 30 and reverts to the state general fund as soon as all payments of money committed have been made.

Sec. 3. This act becomes effective on July 1, 1993.

SUMMARY--Requires state board of education to establish course of study to improve home and occupational skills. (BDR 34-426)

FISCAL NOTE: Effect on Local Government: No.

Effect on the State or on Industrial Insurance: Contains Appropriation.

AN ACT relating to education; requiring the state board of education to establish a course of study relating to home and occupational skills; making an appropriation; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. NRS 388.380 is hereby amended to read as follows:

388.380 1. Except as otherwise provided in subsection 2, the board of trustees of a school district in a county whose population is 100,000 or more shall and any other board of trustees of a school district may:

(a) Establish and maintain occupational schools or classes giving instruction in the subjects approved by the state board for occupational education.

(b) Raise and expend money for the establishment and maintenance of occupational schools or classes.

2. The board of trustees of each school district shall incorporate into the curriculum:

(a) Occupational guidance and counseling; [and]

(b) *Home and occupational skills; and*

(c) Technology,

in accordance with the courses of study adopted by the state board pursuant to NRS 389.170 and 389.180 [.] *and section 2 of this act.*

Sec. 2. Chapter 389 of NRS is hereby amended by adding thereto a new section to read as follows:

1. The state board shall, by regulation, establish a course of study relating to home and occupational skills.

2. The course of study must include:

(a) Instruction which introduces each pupil to skills relating to:

(1) Making decisions;

(2) Solving problems; and

(3) Management and leadership; and

(b) The opportunity to apply these skills to all areas of daily living.

3. The instruction required by this section must be made available to each pupil before his completion of the 8th grade. The board of trustees of a school district may direct that the course of study be given over a 2-year period during the 7th and 8th grades.

4. The board of trustees in each school district shall organize and offer the course of study within the limits of money made available to the district by the legislature for that purpose.

Sec. 3. NRS 389.010 is hereby amended to read as follows:

389.010 Except as otherwise provided in NRS 389.170 and 389.180 **[,]** *and section 2 of this act,* boards of trustees of school districts shall enforce in schools the courses of study prescribed and adopted by the state board.

Sec. 4. 1. There is hereby appropriated from the state general fund to the state board of education the sum of $1,376,340 for the purchase of equipment and instructional materials for use by the local school districts in providing the course of study designed to improve home and occupational skills required pursuant to section 2 of this act.

2. This appropriation must not be considered when determining the amount of money available for salaries of teachers or employees of the local school districts.

3. Any remaining balance of the appropriation made by subsection 1 must not be committed for expenditure after June 30, 1995, and reverts to the state general fund as soon as all payments of money committed have been made.

Sec. 5. This act becomes effective on July 1, 1993.

SUMMARY--Supports national educational goals for State of Nevada.
(BDR R-427)

CONCURRENT RESOLUTION--Supporting the national educational goals established by President Bush, as modified for the State of Nevada.

WHEREAS, The Nevada Legislature recognizes the importance of providing high quality education for its residents; and

WHEREAS, In 1991, President Bush released an educational strategy called "America 2000" which contains six long-term national educational goals; and

WHEREAS, These national goals were established to emphasize the importance of education to the success of the United States and to encourage states to raise their educational standards; and

WHEREAS, The national educational goals have been modified for the State of Nevada and provide that by the year 2000:

1. All children in this state will start school ready to learn;

2. The high school graduation rate in this state will be at least 90 percent;

3. Students in this state will have demonstrated competency in challenging subject matter, and every school will ensure that students use their minds well;

4. Students in this state will be ranked in the top 10 percent of the nation in mathematics and science achievement;

5. Every school in this state will be free of drugs and violence and offer a disciplined learning environment; and

6. Every adult in this state will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE CONCURRING, That the members of the Nevada Legislature support the national educational goals as modified for the State of Nevada; and be it further

RESOLVED, That the of the prepare and transmit a copy of this resolution to the State Board of Education.